Missouri Department of Conservation Setting Duck Season Dates and Zoning Boundaries: A Public Workshop

The opportunity for changing duck season structure (zone boundaries and season splits) is available to states every five years. The "open season" for change is 2011 and the Missouri Department of Conservation will host a series of workshops during March and April 2011 to gain input from hunters about duck season dates and zone boundaries for the 2011-2015 seasons. The purpose of the workshops is to share information used to develop hunting season recommendations and to provide an opportunity for hunters to offer their views about season dates, zone boundaries and split seasons during the 2011-2015 seasons.

Workshop Agenda includes the following:

1) 7:00 pm - Introduction and purpose of the workshops

2) 7:10 pm - Presentations to include a review of information used to develop waterfowl season recommendations, including season dates and zone boundaries

3) 7:45 – Small group breakouts. Small groups will be asked to provide a consensus recommendation for season dates and zones for the next five years in the region they hunt most. Each small group will be asked to:
   - Individual group members complete a survey
   - Select a group leader who will report results
   - Select a recorder to compile the individual surveys and record the group recommendation
   - Review information sources for making a decision about season dates and zone boundary location
   - Develop a consensus recommendation about 2011-2015 zone boundaries, split seasons and season dates.

4) 8:30 - Group leaders report their group's recommendation to workshop attendees.

5) Questions and discussion as time allows.

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Duck Season Dates and Zone Boundaries in Missouri

Prior to 1976, duck zones were not an option resulting in season dates that were the same for all hunters throughout Missouri regardless of location or habitat hunted. Season lengths of 30, 45, or 50 days made it particularly challenging to accommodate widely divergent preferences and hunting styles with a statewide season. A split season was first implemented in 1976 when a nine-day segment followed an October 26 through December 5 statewide season. The split was designed to provide late season opportunity (Dec. 26-Jan. 3) that had not been available during most years. During 1977-79, two zones were employed, with seasons in the North Zone timed about three weeks earlier than South Zone seasons (Figure 1 shows zone configurations and Table 1 shows historic season dates). Two zones with a split season (2 segments) first became an option and were in place during 1980-1985. During 1980-82, a 5-day early segment in the North Zone and a 5-day late split in the South Zone complemented a statewide season of 45 days. An early segment of 3-5 days was retained in the North Zone during 1983-85 (40 to 50-day seasons), while the late segment in the South Zone was expanded to 10-18 days. North Zone seasons during 1986-90 were 30-40 consecutive days, while South Zone seasons included an early segment of 16-23 days and a late segment of 13-17 days. Beginning in 1991, Missouri was divided into North, South, and Middle zones and, based upon hunter input, the three zone structure has remained in place since although there have been adjustments to the boundary lines. The North/Middle Zone boundary was adjusted during 2001-2005 to include portions of Lincoln, Warren, and St. Charles counties in the Middle Zone and the Middle/South Zone boundary was modified to include Barton, northern Jasper and southern Vernon counties in the South Zone. The duck zone boundary between the North and Middle zones was changed for the 2006-2010 seasons from Highway 54 and 50 in western Missouri to I-70 to accommodate the desire for later hunting opportunity in this region. The boundary between the Middle and South zones remained unchanged. The 2006-2010 zone boundaries represent a compromise between regions and among hunters within regions.

Following annual proposals from states for zone boundary changes, the U.S. Fish and Wildlife Service developed criteria to limit options for split seasons and zones, and to limit the frequency of change to 5-year intervals. Since 1991, states have been required to select one of the following options; 1) a statewide season with no zones or splits, 2) a statewide season split into 3 segments, 3) a statewide season split into 2 segments, 4) two zones with a split season in either or both zones, or 5) three zones with continuous seasons in each zone. The three-zone option was selected by Missouri in 1991, and because it has been supported by a majority of hunters, it has been retained. The same options will be available for the 2011-2015 waterfowl seasons; however, two additional options - four zones with no splits or three zones with one split- may also be offered. Information sources for developing recommendations for the 2011-2015 period will include long-term data from harvest, banding, populations, weather, and hunter preferences. Hunter preference information will include survey results, along with results of season dates and zoning workshops.

Preferences for season timing among Missouri duck hunters varies as widely as the habitats they hunt, the species they pursue, and the many hunting styles employed during a given season. Early season habitats include shallow marshes, creeks, and ponds. Green tree reservoirs provide shallow water habitat later in the season. Late season habitats include rivers and reservoirs,

except in the south where freeze-up is less predictable and a wider range of habitats are available throughout much of the season. In recent years, late season field hunting has also grown in popularity. Among years, hunting opportunity and hunter success are dependent on the weather. Summer weather patterns determine wetland status and food conditions going into fall. Growing season floods can negatively impact wetland food production as can drought. Fall weather patterns affect migration timing, food availability and the length of time ducks remain in Missouri. Cold weather brings an end to the season for many hunters, whereas for others, it is just the beginning. Concerns about duck season dates have been a long-standing source of contention among duck hunters who hunt different regions of the state, for different species, and in different habitats.

The Missouri Department of Conservation (MDC) is also proposing to develop a formula for setting duck season dates for the next five years. This formula will provide guidance on when the duck season will open in the event of liberal (60-day), moderate (45-day), or restrictive (30-day) seasons offered by the U.S. Fish and Wildlife Service. Beginning in 2004, MDC began using an informal formula to establish season dates with the North Zone opening on the last Saturday in October, the Middle Zone opening on the first Saturday in November, and the South Zone opening on Thanksgiving Day. Maintaining opening dates associated with a specific weekend of the month allows the timing of duck season to vary by seven days within a six-year period and accommodates those with earlier or later season preferences over this period of time. Establishing a formal formula that will be in place for the next five years will help hunters plan for upcoming duck seasons by knowing the timing of duck seasons in the event of 60-day, 45-day, or 30-day seasons further in advance. It also provides a more realistic framework to evaluate hunter satisfaction with season dates as weather, migration timing, and habitat all could affect annual opinions about season timing.

Given the range of hunter preferences that exist, it is likely that not all hunters will be completely satisfied regardless of which season dates or zone boundaries are selected. The challenge is to provide a balance that will accommodate at least a portion of most hunters' desires. Considerations for developing the season date and zone boundary recommendations for the next five year period are as follows:

1. Current duck season options include possibilities for 30-day, 45-day, and 60-day seasons. We have experienced nearly unprecedented opportunity with 60-day seasons since 1997. There is no guarantee that this will continue and potential season lengths of 30 and 45 days are possibilities that must be considered for the next five years as changes in zone boundaries or season structure are contemplated.

2. Season dates will be recommended to accommodate a range of hunting styles and preferences. Dates that completely favor one group will likely disenfranchise another and may not accommodate the range of hunting styles throughout a region.

3. Although season dates will continue to be based primarily on timing for mallards, season timing for other species will also be considered. Mallards are preferred by most Missouri hunters and account for 50% or more of the duck harvest. However, other ducks comprise about

80% of the fall flight and should be considered as season dates and zone boundaries are developed.

4. In response to hunters' desires for later season dates, MDC shifted seasons about a week later in each zone beginning in 2004 and this change has resulted in the latest season dates in modern history.

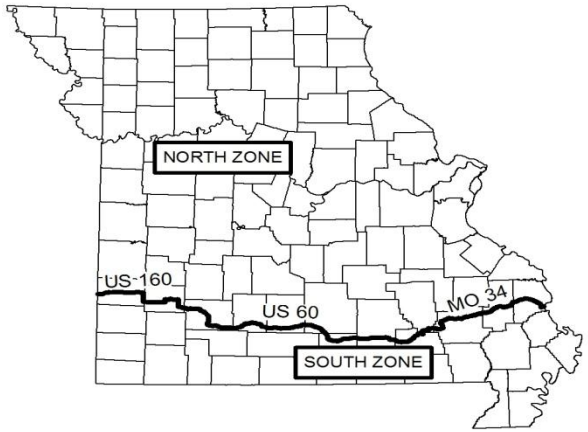
5. Duck zone boundaries should be based upon the preferred season dates for hunters throughout a region. Boundaries should not be designed to accommodate a particular area or ownership, whether it is public or private.

6. The purpose of duck zones is to provide the "best" season dates for a particular region, not to extend the season for hunters who travel from zone to zone to extend their hunting season.

7. Recommendations for 2011-2015 will depend primarily upon hunters input. If most hunters from a particular region prefer a different season structure (zones and splits) or season dates, a change will likely be recommended. Otherwise, "change for the sake of change" will not be recommended. Regardless, the time and effort taken by hunters to provide their input is valued and it will help us develop the best possible recommendation for Missouri duck hunters.

Missouri Duck Zones, Prior to 1977

Missouri Duck Zones, 1977-79

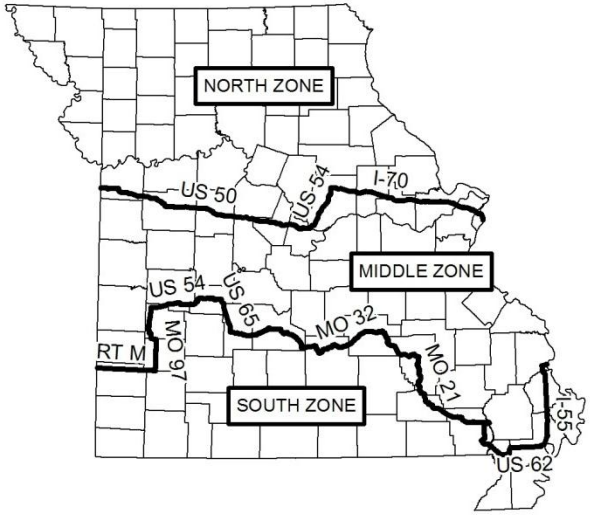


Missouri Duck Zones, 1980-85

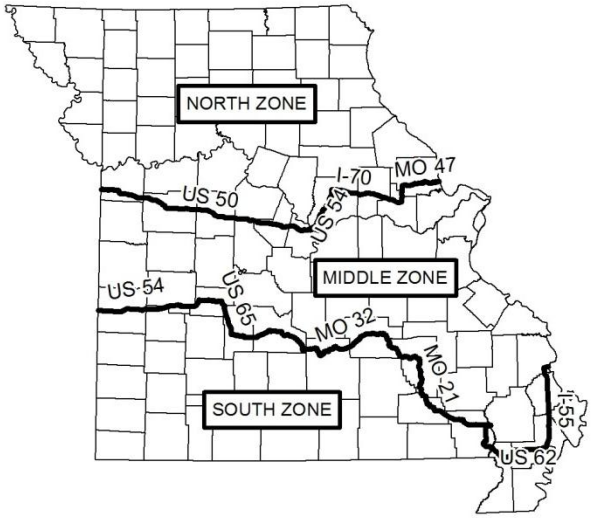
Missouri Duck Zones, 1986-90

Figure 1. Missouri duck zones & seasons

Missouri Duck Zones, 1991-2000



Missouri Duck Zones, 2001-2005



Missouri Duck Zones, 2006-2010

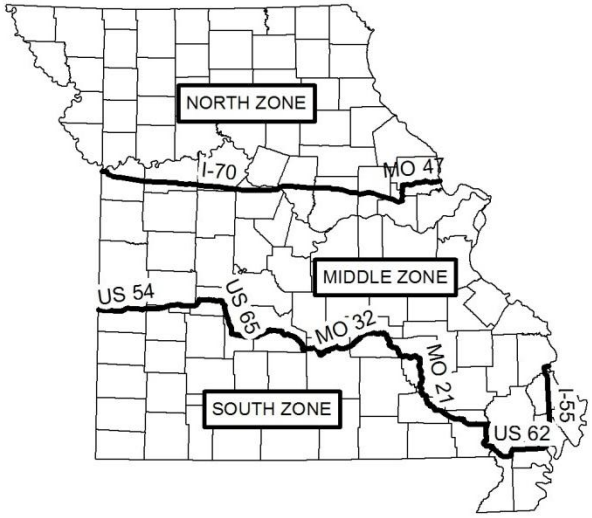


Figure 1. Missouri duck zones & seasons (cont.)

Duck Season Data for Missouri

Considerable information is used each year when duck season dates are recommended for Missouri. Pages 9-10 provide statewide fall and winter weather trends from 1895 to 2010. Season dates from 1962-2010 are presented on page 14. Regional weather, waterfowl population, and harvest data for 12 portions of Missouri begin on page 15 (Figure 1). Hunter opinion data about season dates and zone boundaries for 23 portions of Missouri begin on page 39 (Figure 2).

Weather information was provided by the Missouri Climate Center. Data were from weather stations that correspond to the 12 primary areas of Missouri used to summarize population and harvest data (Figure 1). Weather data includes the dates when there is a 10, 20, 30, 40, 50, 60, 70, 80, and 90 percent chance of the temperature reaching 24° Fahrenheit and 16° Fahrenheit based on weather records from 1971 - 2000. Figure 3 illustrates the dates for each of the 12 regions for which there is a 90% chance of the temperature reaching 24°F and 16°F. For the past four years, staff at MDC managed wetland areas have recorded the days when wetlands are covered by ice thick enough to reduce shallow water hunting (i.e., about 2 inches thick). This information provides some perspective of when shallow water habitat freezes.

Population data indicate when ducks move through the various regions of Missouri. Comparisons between the 30-year and 5-year average are provided to illustrate how recent experiences compare to long-term trends. Information about early-migrant ducks (teal, wigeon, pintails, etc.) and mallards are included to reflect differences in migration timing among these species.

Harvest information from the U.S. Fish and Wildlife Service's (FWS) post-season harvest survey from 1997-2009 provides clues about the timing of harvest in Missouri during the period when 60-day seasons have been in place. Band recoveries from this period also illustrate the distribution of harvest. Missouri Department of Conservation wetland area managers record the number of hunters and their harvest each day. These data demonstrate changes in hunter effort and harvest in shallow water habitat. Harvest from Department of Conservation wetland areas typically accounts for about 16% of the statewide harvest.

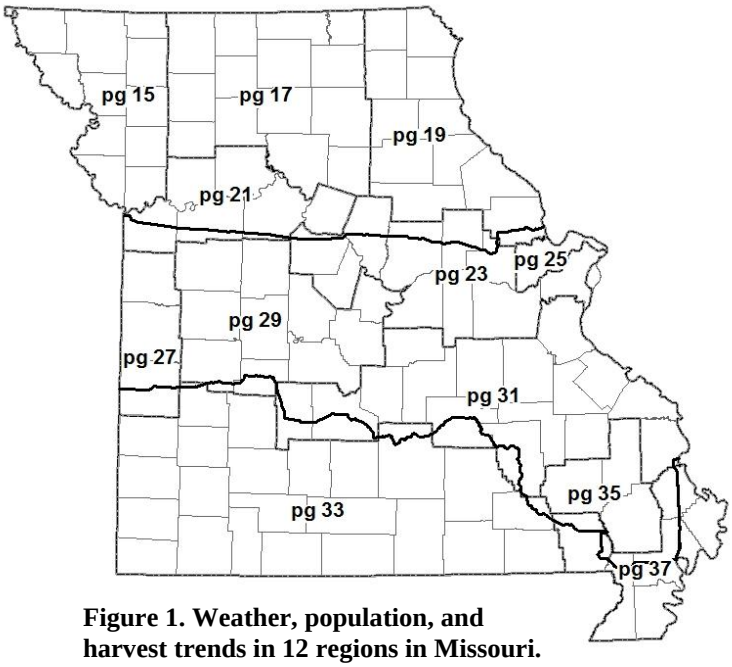


Figure 1. Weather, population, and harvest trends in 12 regions in Missouri.

Hunter preference data are from post-season harvest surveys conducted annually and from a more detailed survey conducted after the 2009 season that included more specific questions about hunter zone boundary and season date preferences. Data from the 2009 survey show hunter preferences for season dates and zone boundaries as well as their satisfaction with season dates and zone boundaries. Post-season harvest survey results from 1997-2009 reveal how hunters responded to a question asking which week they most prefer to hunt ducks.

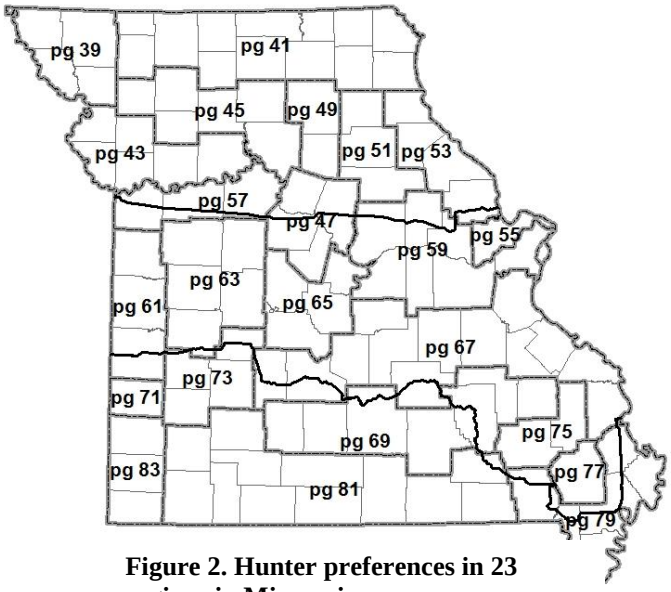


Figure 2. Hunter preferences in 23 regions in Missouri.

Details about Data Sources and Limitations

Weather: The Missouri Climate Center is a section of the Atmospheric Science program of the Department of Soil and Atmospheric Sciences, University of Missouri-Columbia. The center is an integrated unit of atmospheric and climate research and service in the University's College of Agriculture, Food and Natural Resources. Dr. Patrick Guinan, climatologist, provided weather data and sources for locating additional information. MDC wetland managers provided information about the number of days their respective wetlands were ice-covered.

Population: These data are the result of at least biweekly surveys on state and federal wetland areas. The data are reported as the percent of the fall/winter duck use that occurred by week. For some areas that have been acquired or developed more recently (e.g., Grand Pass CA or Ten Mile Pond CA), the population data may be less than the 30 years usually available. In other instances (e.g., South Missouri), no managed state or federal wetland exists in the region; here, the most proximate and appropriate site is used (e.g., Montrose CA was used to reflect populations for the South Missouri Region).

Harvest: Each year the FWS conducts a mail survey and also asks a sample of hunters to submit a wing from each duck harvested. These data are used to estimate the size and species composition of the harvest. Although the sample sizes for particular regions can be small and result in imprecise estimates, we have combined data from 1997-2009 to provide clues about the distribution of harvest across regions in Missouri throughout the fall. These estimates are more precise in areas with larger sample sizes. These data are summarized so each month consists of 4 periods of approximately 8 days each. To account for differences in the number of days in a week when a season is open, the daily average per week is reported. For example, the 4th period in October may only have 1 or 2 days if the season does not open until the last weekend in

October. We then calculated the percent each week contributed to the yearly total and then took the average percent across years. This approach provides a general perspective of how much the average daily harvest each week contributes to the overall harvest.

Band recovery data provide another source of information about species composition and duck harvest distribution by location and date. However, caution must be taken when interpreting the species composition information available from band recoveries as considerably more mallards are banded than are other ducks. This results in mallards comprising the highest percent of band recovery information. The band recovery data are summarized in a similar fashion as the harvest data and are presented as the percent the daily average per week contributes to the yearly total.

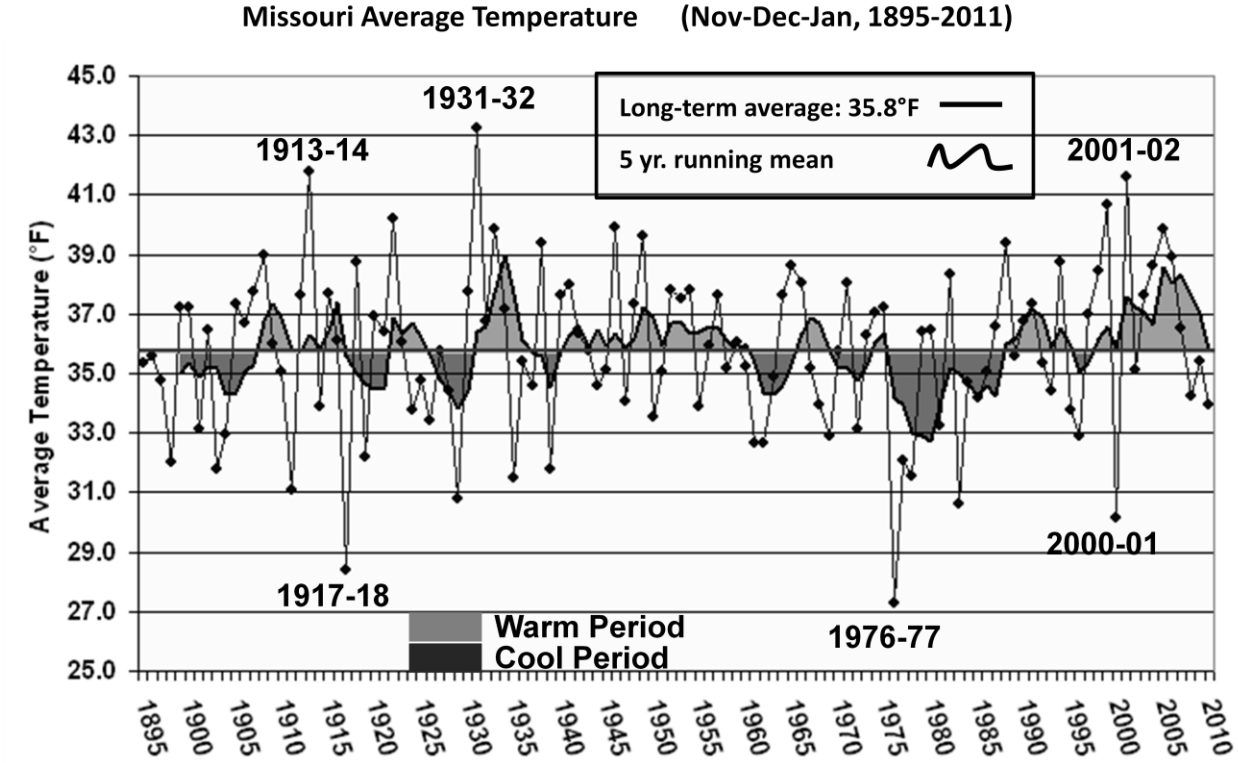
Area harvest and hunter effort data were summarized into 9 periods of approximately 8 days, with the exception of the first period. The first period corresponds to opening weekend and includes 2 days. Unlike the other population and harvest data, hunter effort and harvest data from conservation areas are organized by week beginning with the first day of season and not by date. To account for the increased harvest that often occurs during opening weekend regardless of season timing, we counted opening weekend as the first "week" even though it includes only a 2-day period. As a result, the average daily harvest during week 1 is often higher than the average daily harvest during the remaining weeks of the season. Data for weeks 2 through 9 provide the best clues about how weather, habitat, and migration timing influence harvest in a particular region. In some instances, the analysis may exclude Conservation Areas when data were not available. In regions that do not have a Conservation Area, data from the most proximate site are used.

Hunter Preference: Each year approximately 5,500 migratory bird hunters are sent a short survey to determine hunting activity, harvest, the week hunters most prefer to hunt, and their satisfaction with season dates, zone boundaries, and hunting experience. In 2009, a much more in-depth survey was sent to 10,000 migratory bird hunters to assess hunter regulatory preferences and opinions about waterfowl management. The level of precision of the responses is low when broken down into small units. However, analysis of hunter preference data between years reveals consistency even in the regions with a relatively low number of responses. In this report, charts are included even when the sample sizes are low.

Statewide Summary of Weather, Harvest, and Hunter Preferences

Weather:

Temperatures vary annually in Missouri, and dramatic differences may occur from year to year. The chart below shows that fall temperatures were well above the long-term average during the 1930s but were generally below the long-term average from the mid-1970s to the early to mid-1990s. Fall temperatures during the most recent decade have generally been above normal, but the last three years have been just below normal. When considering season timing, the challenge is to balance memories of recent falls and winters with more long-term data that suggests extreme annual variation and general cycles going from warmer than normal to colder than normal temperatures. Although climate models generally suggest the possibility of warmer temperatures over the next century in Missouri, it is uncertain how annual fluctuations, long-term cyclical patterns, and climate change will influence the weather patterns over the next five years.



For most duck hunters, a key question is when they can expect wetlands and lakes to freeze-up. A temperature that causes "freeze-up" cannot be specifically defined. Size of the water body, water depth, vegetation, wind protection, flowing water, and other factors all have a bearing on whether or not a particular body of water freezes over at a certain temperature. Regardless, we selected daily low temperatures of 24° F and 16° F to represent the relative risk of freeze-up to hunters in various habitats. A low temperature of 24° was selected to indicate initial ice formation on shallow water areas. A low temperature of 24° is also likely to ensure that mallards have arrived in reasonable numbers. A low temperature of 16 ° was selected to represent the risk

of more severe ice conditions. Using these temperatures, the probability of freeze-up occurs earlier in Northwest Missouri and later in the Bootheel of Missouri. Mid-latitude areas are more variable, but the trend of colder temperatures from northwest to southeast is still apparent.

A 50% probability of reaching 24° F by mid-November, and a 90% probability of reaching 24° F by late November or early December, appears to be likely for much of the state. A 50% probability of reaching 16° F by early December, and a 90% chance of reaching 16° F by mid to late December also seems likely for most mid-state areas. A 90% probability of reaching 16° F in the South, and Southeast regions does not occur until January.

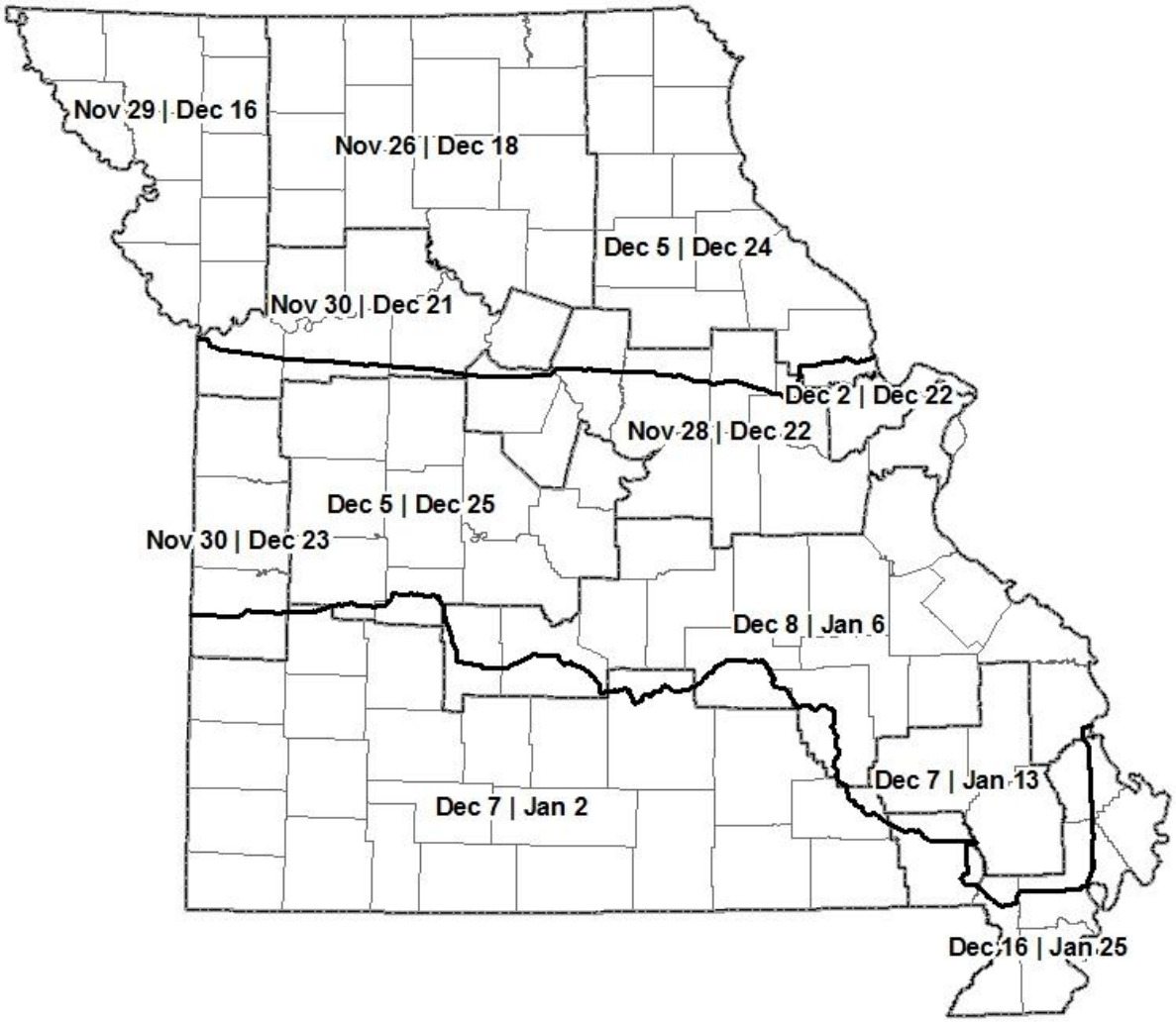


Figure 3. Dates for each of 12 regions in which there is a 90% probability of reaching 24 degrees and 16 degrees Fahrenheit.

Harvest: Duck harvest in Missouri is higher near major river systems and areas with higher numbers of wetlands. Figure 4 depicts how much each of 12 regions contributes to the overall statewide harvest based on FWS harvest estimates and bands recoveries. Although the contribution of total harvest from each region based on band recoveries and FWS harvest differ slightly, together they provide some indications about the statewide distribution of harvest. Based on FWS estimates, hunters in North-Central Missouri, North-East Missouri and St. Charles County accounted for the highest percent of the statewide harvest at 13% each. Based on band recoveries, hunters from the Bootheel accounted for the highest percent of harvest at 13%.

Figure 4. Percent each of 12 regions contributes to the statewide harvest based on U. S. Fish and Wildlife statewide harvest estimate (first number) and statewide duck band recoveries (second number)

Hunter Season Date Preferences: Hunters have a diversity of opinions about season timing. Figures 5, 6, and 7 show the average week hunters' prefer to hunt in 23 regions of Missouri. These figures provide a general perspective of season timing preferences; however, hunters within regions had a diversity of opinions about the season timing that are not necessarily reflected in the average dates depicted below.

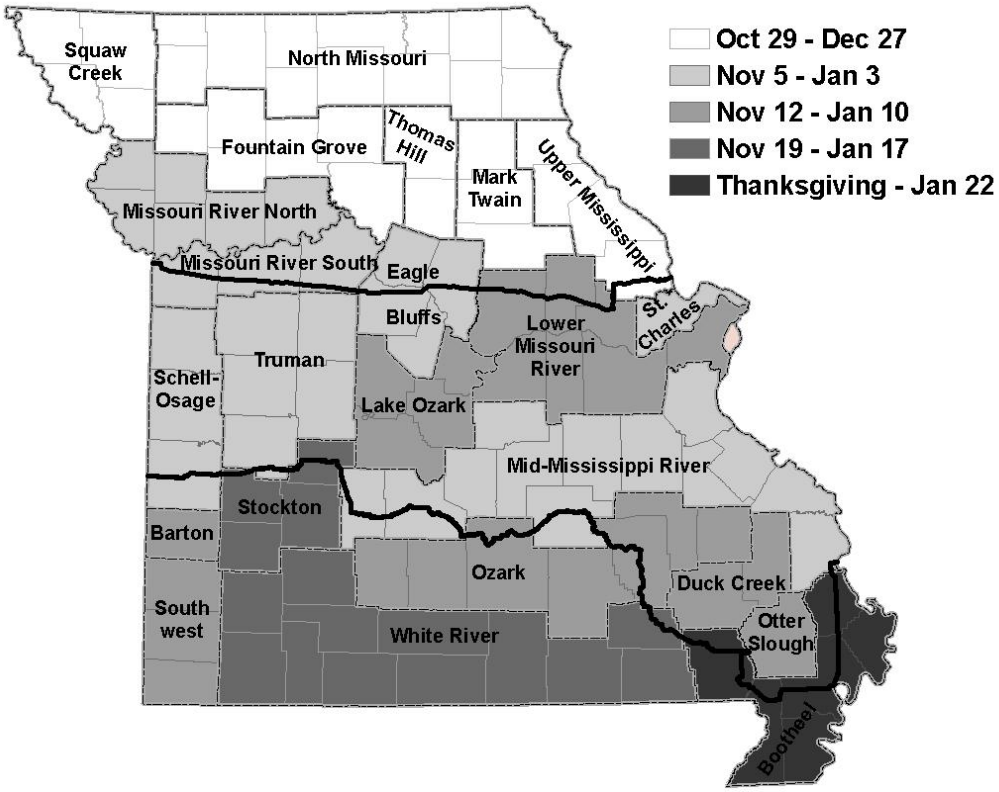


Figure 5: Hunter preferences for a 60-day season.

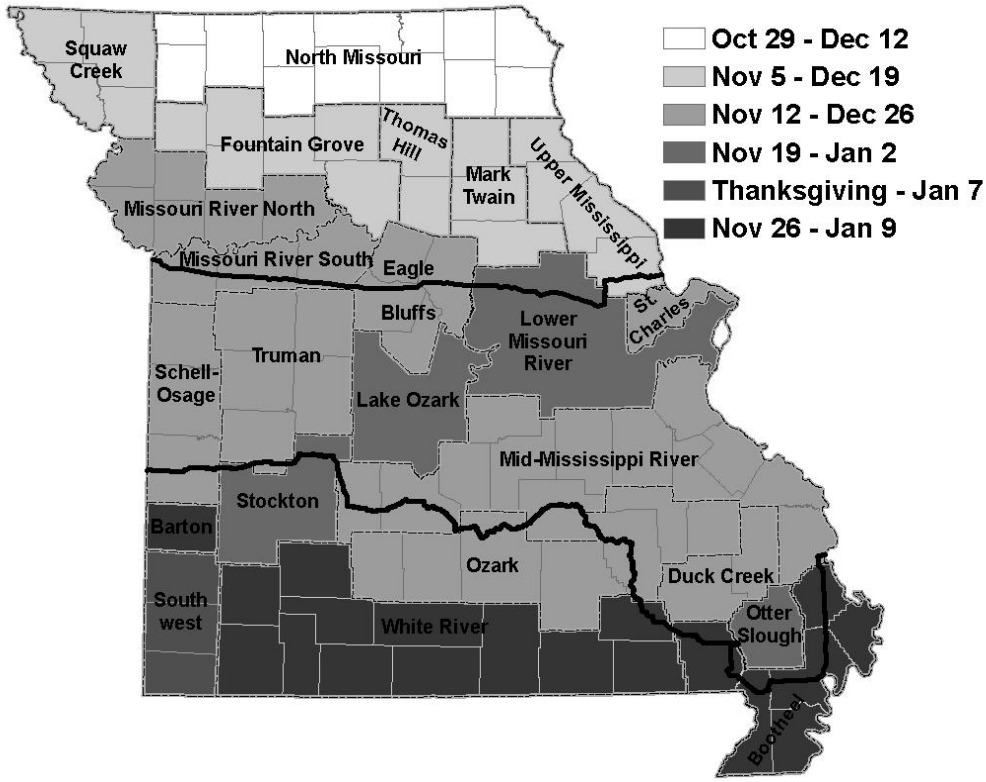


Figure 6: Hunter preferences for a 45-day season.

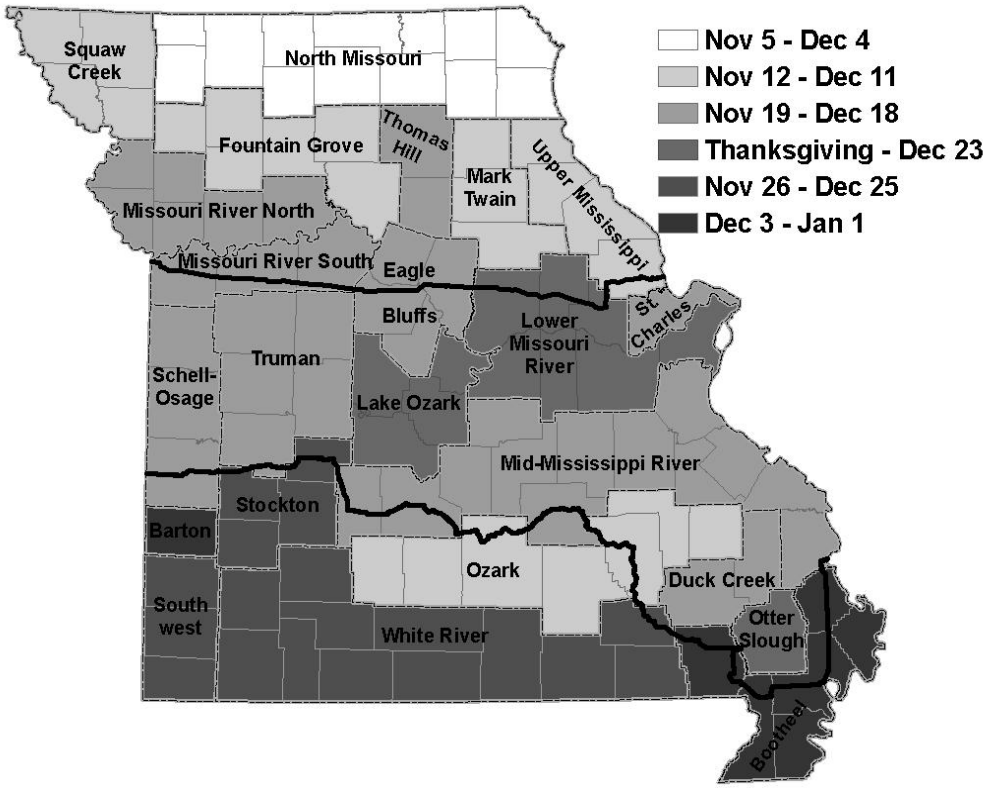
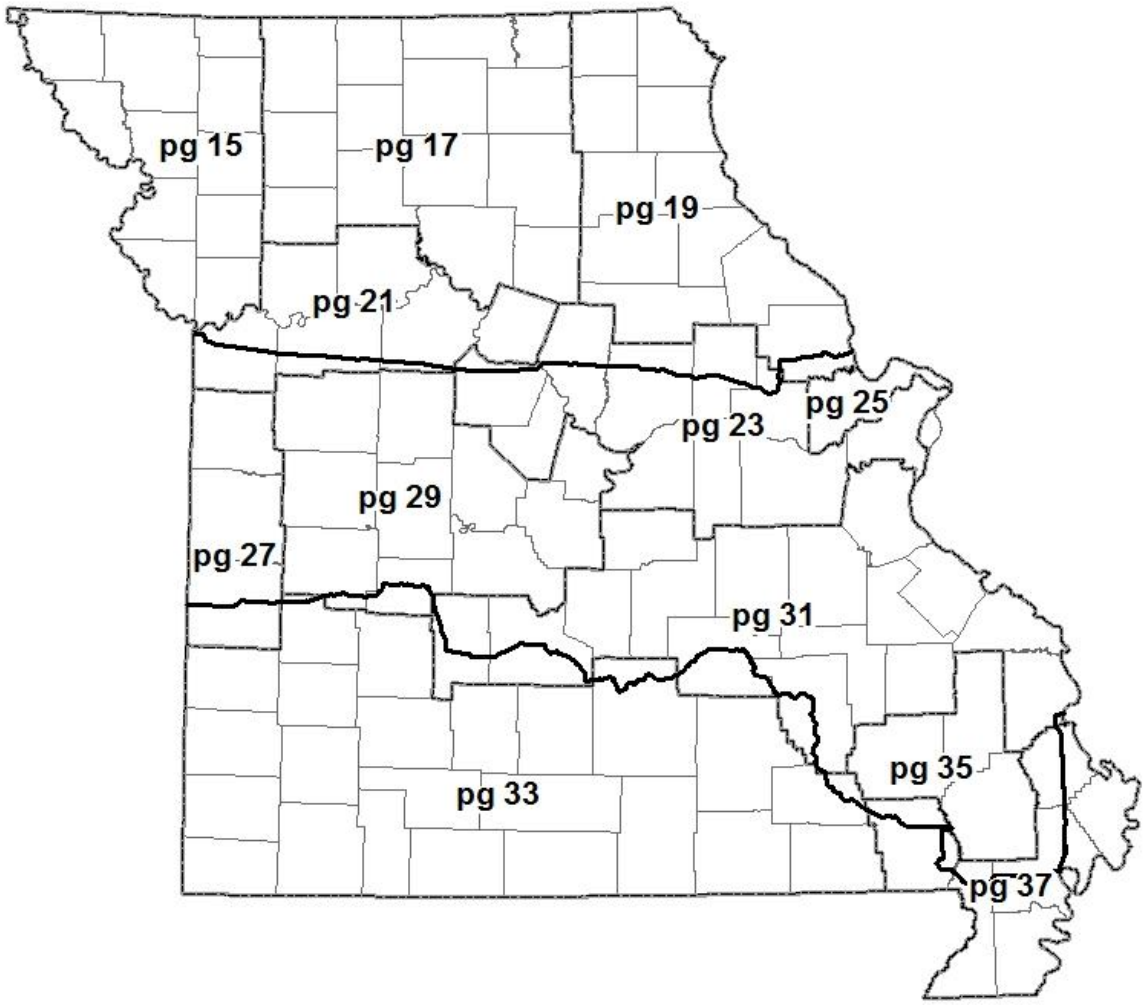


Figure 7: Hunter preferences for a 30-day season.

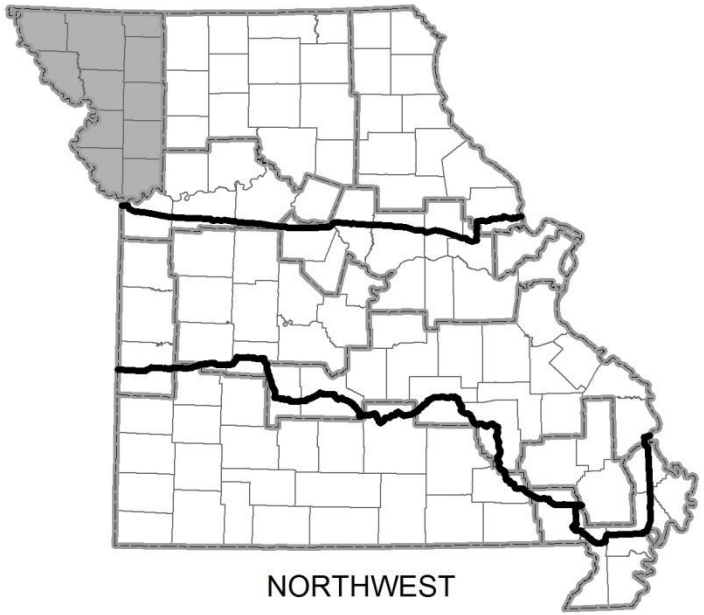
Table 1. Season dates and bag limits from 1960 through 2010.

Season	Days	Bag & Possession	Statewide	North Zone	Middle Zone	South Zone
1962	25	2	11/2-11/26			
1963	35	4	10/25-11/28			
1964	40	4	10/30-12/8			
1965	40	4	10/29-12/7			
1966	45	4	11/1-12/15			
1967	40	4	11/1-12/10			
1968	30	3	11/1-11/30			
1969	30	4	11/1-11/30			
1970	55	6	10/24-12/17			
1971	50	4	10/31-12/19			
1972	50	4	10/29-12/17			
1973	45	7	11/1-12/15			
1974	50	7	10/30-12/18			
1975	50	7	10/29-12/17			
1976	50	10	10/26-12/5 & 12/26-1/3			
1977	45	10		10/25-12/8		11/15-12/29
1978	50	10		10/24-12/12		11/14-1/2
1979	50	10		10/24-12/12		11/14-1/2
1980	50	10		10/18-10/22 & 11/1-12/15		11/1-12/15 &12/26-12/30
1981	50	10		10/17-10/21 & 10/31-12/14		10/31-12/14 & 12/26-12/30
1982	50	10		10/16-10/20 & 10/30-12/13		10/30-12/13 & 1/8-1/12
1983	50	10		10/15-10/19 & 11/1-12/15		11/1-12/4 & 12/17-1/1
1984	50	10		10/20-24 & 11/1-12/15		11/1-12/2 & 12/15-1/1
1985	40	5		10/19-10/21 & 11/2-12/8		11/2-12/1 & 12/27-1/5
1986	40	5		11/1-12/10		11/22-12/14 & 12/27-1/12
1987	40	5		10/31-12/9		11/21-12/13 & 12/26-1/11
1988	30	3		11/5-12/4		11/19-12/4 & 12/26-1/8
1989	30	3		11/4-12/3		11/18-12/4 & 12/26-1/7
1990	30	3		11/3-12/2		11/17-12/4 & 12/26-1/6
1991	30	3		11/2-12/1	11/9-12/8	11/30-12/29
1992	30	3		10/31-11/29	11/7-12/6	11/28-12/27
1993	30	3		10/30-11/28	11/6-12/5	11/27-12/26
1994	40	3		10/29-12/7	11/5-12/14	11/25-1/3
1995	50	5		10/28-12/16	11/4-12/23	11/22-1/10
1996	50	5		10/26-12/14	11/2-12/21	11/23-1/11
1997	60	6		10/23-12/21	10/30-12/28	11/13-1/11
1998	60	6		10/22-12/20	10/29-12/27	11/12-1/10
1999	60	6		10/23-12/21	10/30-12/28	11/13-1/11
2000	60	6		10/26-12/24	11/2-12/31	11/16-1/14
2001	60	6		10/27-12/25	11/3-1/1	11/22-1/20
2002	60	6		10/26-12/24	11/2-12/31	11/23-1/21
2003	60	6		10/25-12/23	11/1-12/30	11/22-1/20
2004	60	6		10/30-12/28	11/6-1/4	11/26-1/24
2005	60	6		10/29-12/27	11/5-1/3	11/25-1/23
2006	60	6		10/28-12/26	11/4-1/2	11/24-1/22
2007	60	6		10/27-12/25	11/3-1/1	11/23-1/21
2008	60	6		10/25-12/23	11/1-12/30	11/27-1/25
2009	60	6		10/31-12/29	11/7-1/5	11/26-1/24
2010	60	6		10/30-12/28	11/6-1/4	11/25-1/23

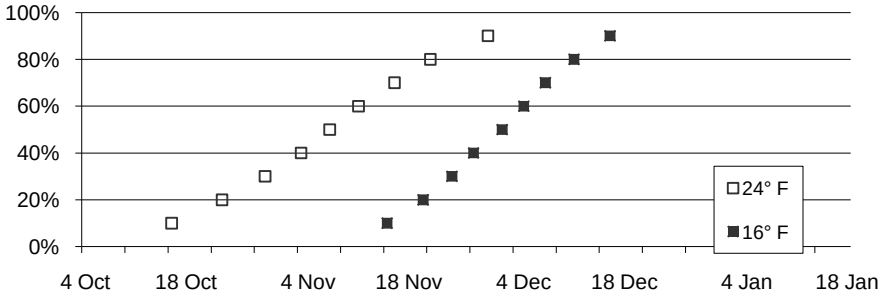
WEATHER, POPULATION, AND HARVEST TRENDS IN 12 REGIONS OF MISSOURI



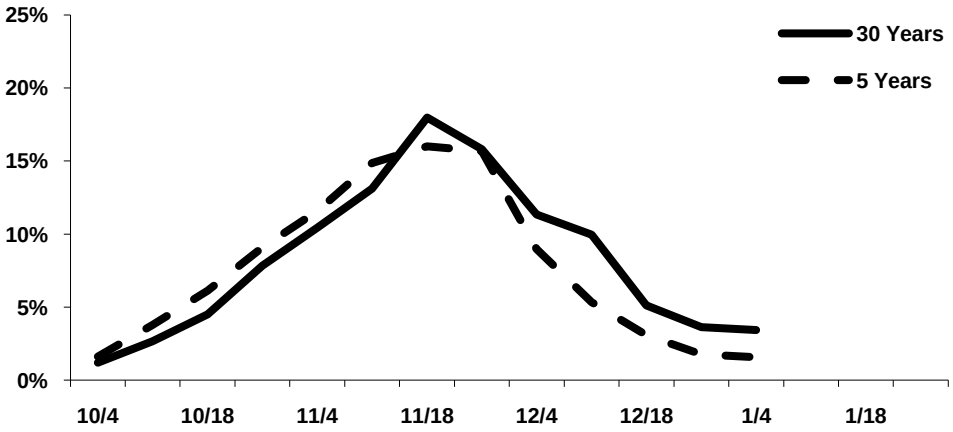
NORTHWEST: In Northwest Missouri, precipitation gradually declines from late summer through fall. Average low temperatures fall below freezing by mid-November. There is a 50% probability of achieving a low temperature of 24° F by November 7. By December 1, there is a 50% chance of a low temperature of 16° F and a 90% chance of 16° F by December 16. The pattern of duck use at Squaw Creek NWR, Bob Brown CA, and Nodaway Valley CA exhibits a gradual buildup through mid-November and a slightly sharper decline during late November and December. Peak numbers occurred at about the same time during 2006-2010 compared to the 30-year average. Early migrants use typically peaks during mid to late October and declines through November. Mallard numbers peak during mid to late November and decline through December as ice conditions develop.



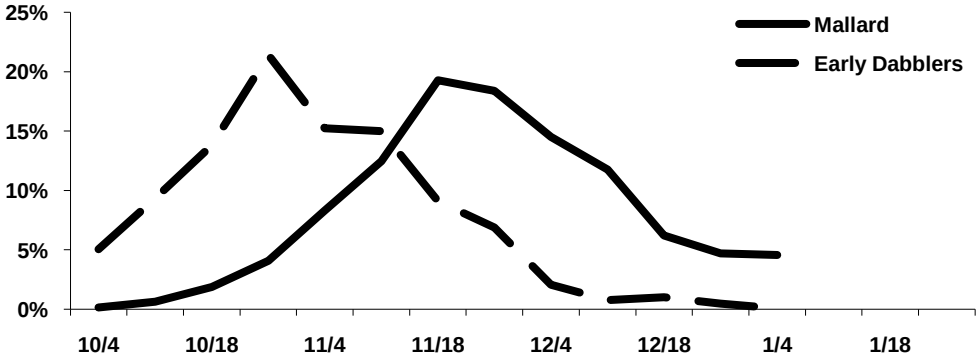
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Oregon, MO.



Percent of duck use by week (Squaw Creek NWR, Bob Brown CA, and Nodaway Valley CA): 30- year average and 5-year average.

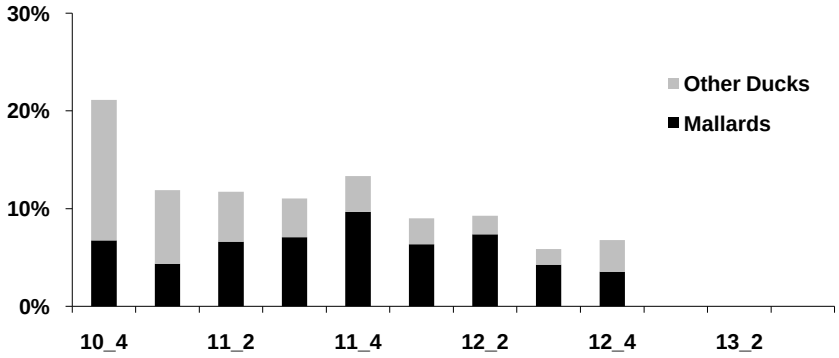


Percent of mallard and early migrant use by week (Squaw Creek NWR, Bob Brown CA and Nodaway Valley CA): 30-year average.

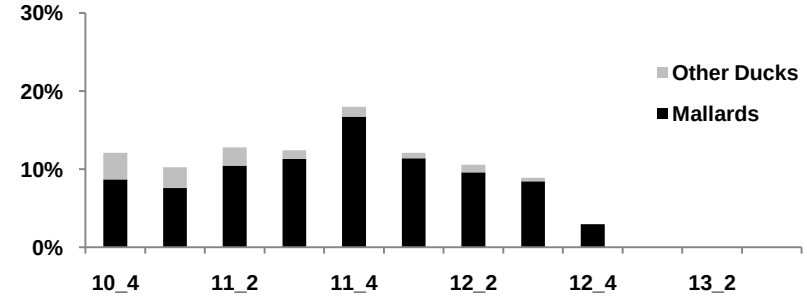


NORTHWEST HARVEST: The Northwest Region accounted for 8% of the U.S. Fish and Wildlife (FWS) statewide harvest estimate and 8% of statewide duck band recoveries during 1997-2009. FWS harvest estimates suggest that the highest harvest, 21% of the season total, occurs during the last week of October. Harvest composition includes 67% early season migrants and 33% mallards during the last week of October. A second peak occurs during the last week of November when 14% of the season total is harvested. Of the ducks harvested during the last week of November, 29% include early season migrants and 79% mallards. Band recoveries were fairly consistent through the entire season with a peak in late November. Average daily harvest over the past 10 years at Bob Brown CA and Nodaway Valley CA remained stable until the last 3 weeks of the season. In cold years, this region has the potential to freeze early and limit harvest opportunity. Over the past four years, both Bob Brown CA and Nodaway Valley CA have lost an average of 19 days to icy conditions as shallow water habitats were frozen by early December. This occurred in 2009 (cold fall) when hunting on most shallow water habitat ended on December 6th due to ice. However, in the event of a mild winter as occurred in 2001 (warm fall), hunter trips and harvest are maintained through late season when open water remains available.

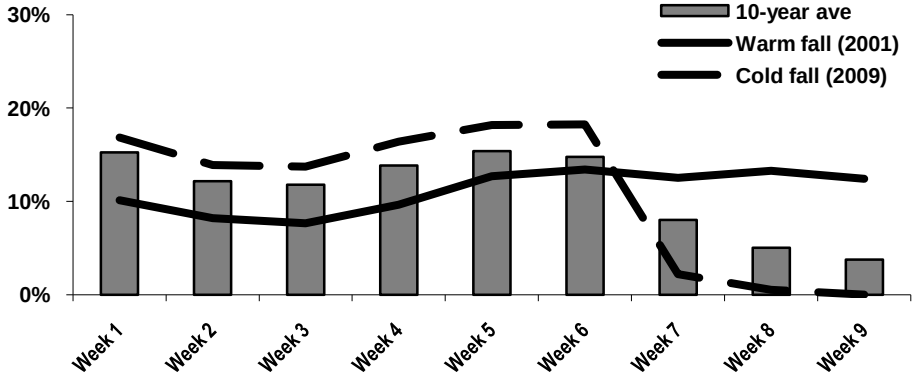
Average daily harvest per week in the Squaw Creek Region based on FWS harvest estimates: 1997-2009.



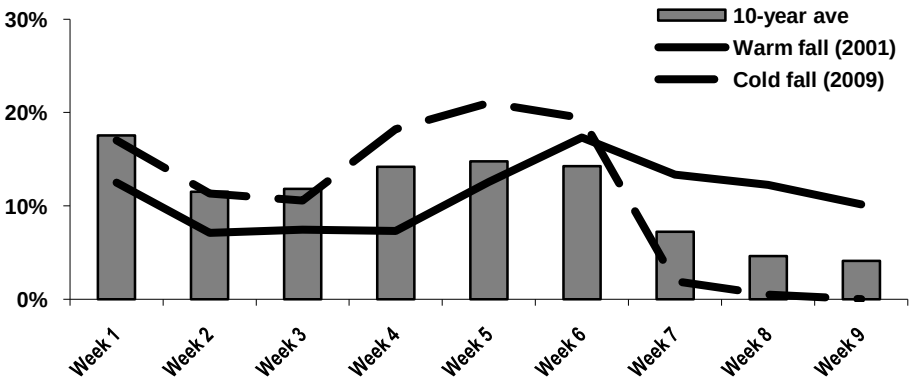
Average daily band recoveries per week in the Squaw Creek Region: 1997-2009 (n=705).



Percent of CA daily hunter trips by week of season at Bob Brown CA and Nodaway Valley CA: 2000-2009.

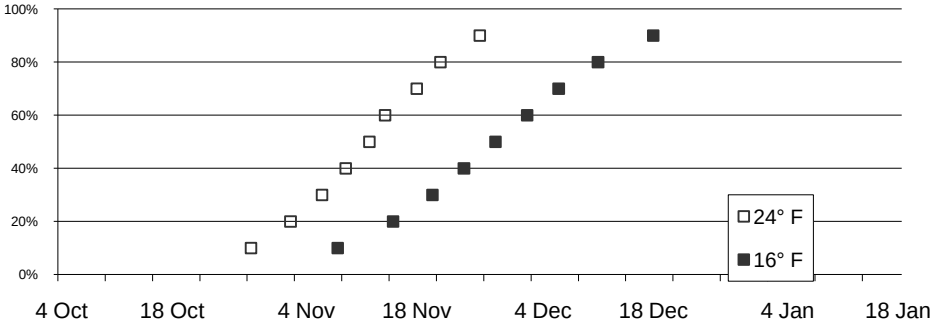


Percent of CA daily harvest by week of season at Bob Brown CA and Nodaway Valley CA: 2000-2009.

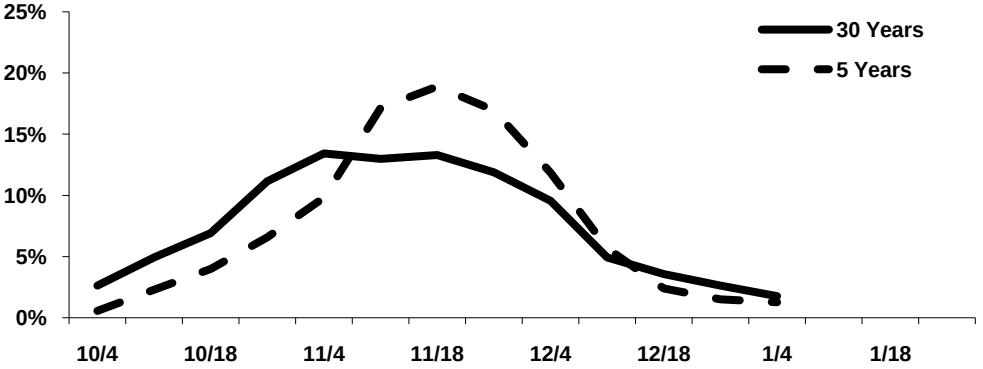


NORTH-CENTRAL: Precipitation patterns in North-Central Missouri, although somewhat wetter, are similar to Northwest Missouri with gradual declines after September. Freezing conditions initially occur during mid-November and there is a 50% probability for a low temperature of 24° F occurring by November 12. By December 2 there is a 50% chance of a low temperature of 16° F. Duck use at Fountain Grove CA and Swan Lake NWR typically peak in late November. During the past five years, peak numbers have been higher than compared to the 30-year average and slightly later. Timing of departure has remained essentially unchanged. Late October weather fronts that bring early mallard flights often result in declining numbers of early season migrants such as green-winged teal, pintail and wigeon.

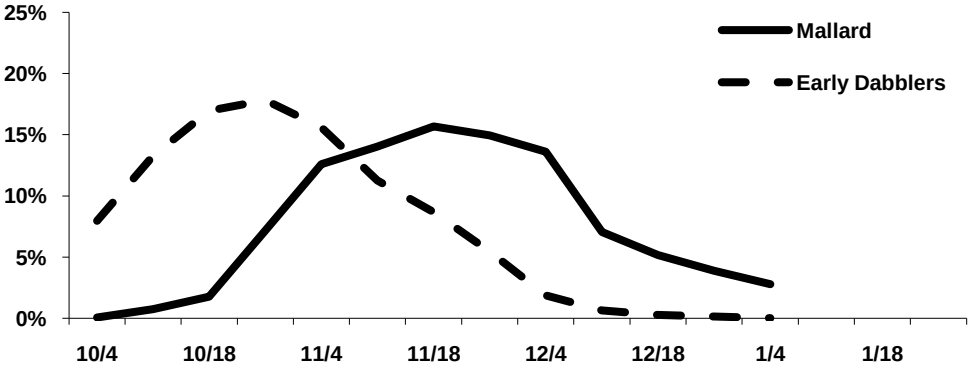
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Brookfield, MO.



Percent of duck use by week (Fountain Grove CA and Swan Lake NWR): 30-year average and 5-year average.

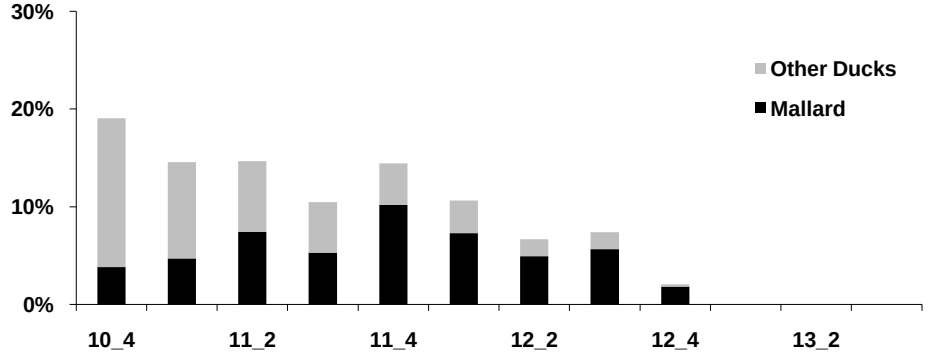


Percent of mallard and early migrant use by week (Fountain Grove and Swan Lake NWR): 30-year average.

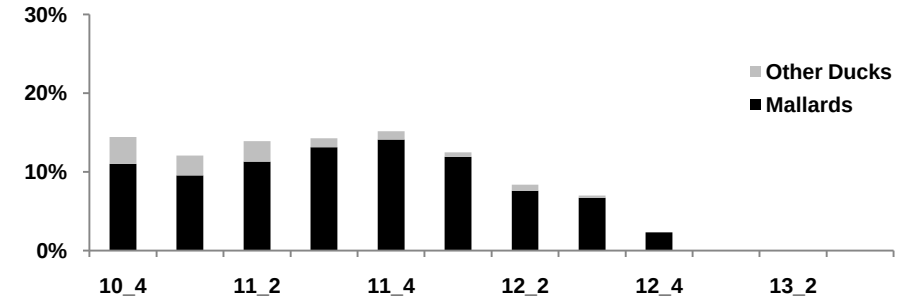


NORTH-CENTRAL HARVEST: This region accounted for 13% of the statewide FWS harvest estimate and 8% of statewide band recoveries during 1997-2009. Harvest estimates indicate that the highest portion of harvest occurs early in the season. Hunters harvested nearly 20% of the season total during the last week of October. Of the ducks harvested during this week, early migrants comprised nearly 80% and mallards just over 20%. A second peak occurs in late November. Hunters harvested 14% of the season total during the last week of November and by this time the bag was primarily mallards (71% vs. 29% other duck species). Band recovery estimates indicate harvest remains fairly consistent throughout November with harvest peaking during the last week of November. By mid-December harvest begins to decline. At Fountain Grove, the average number of daily hunter trips per week and harvest also declines by mid-December as shallow water habitat begins to freeze. In the past four years, shallow water in this region is often frozen by mid-December. To illustrate, Fountain Grove has been ice-covered for an average of 17 days over the past four years. However, hunter trips and harvest are maintained through late season during mild winters when open water remains available.

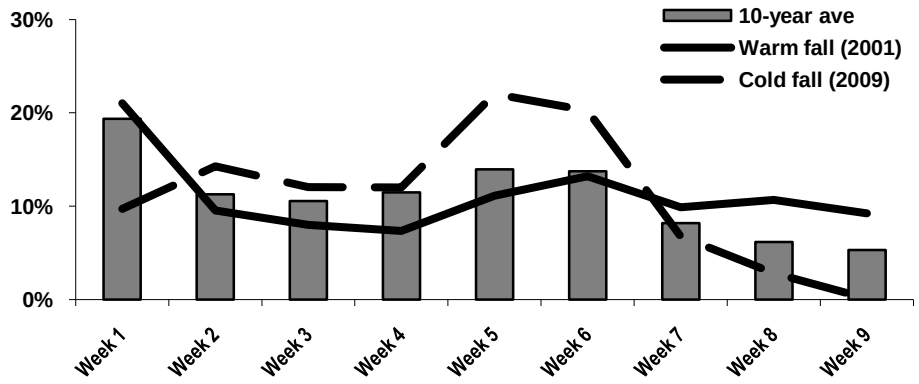
Average daily harvest per week in the North-Central Region based on FWS harvest estimates: 1997-2009.



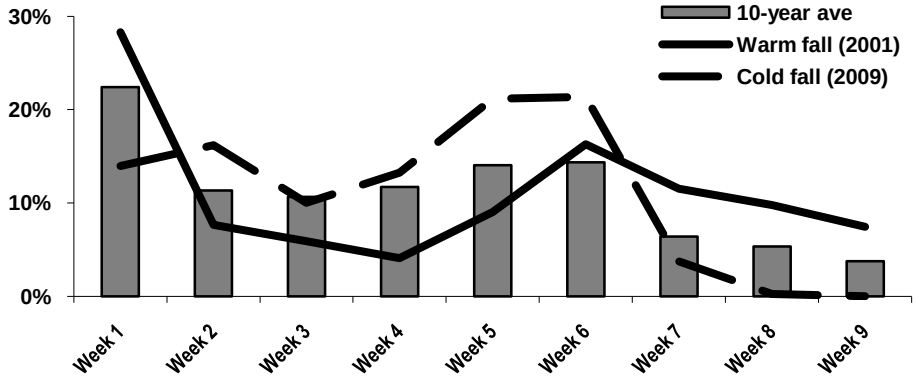
Average daily band recoveries per week in the North-Central Region: 1997-2009 (n=685).



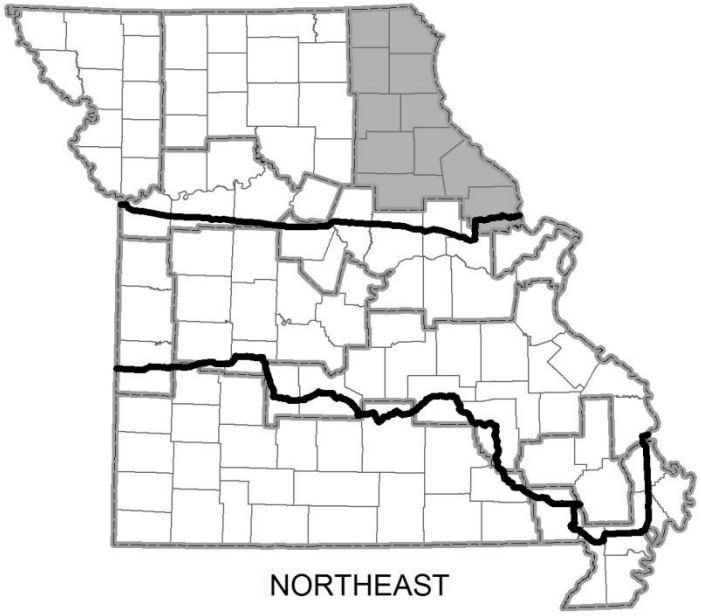
Percent of CA daily hunter trips by week of season at Fountain Grove CA: 2000-2009.



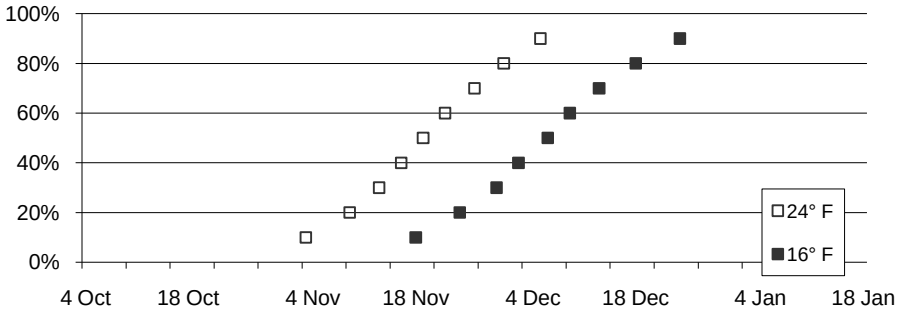
Percent of CA daily harvest by week of season at Fountain Grove CA: 2000-2009.



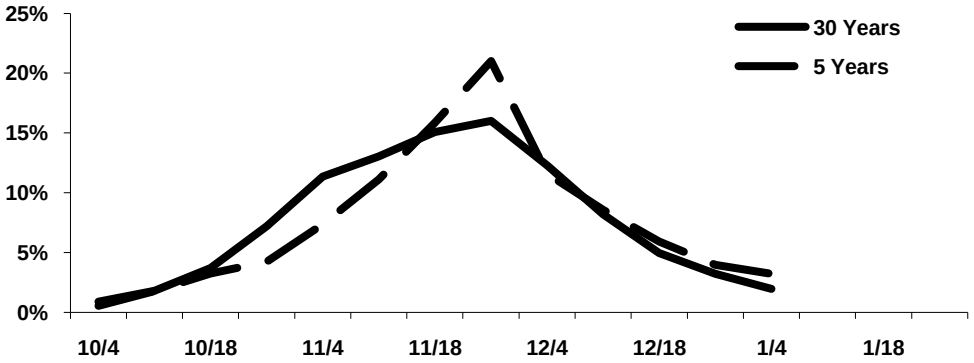
NORTHEAST: Similar to the rest of North Missouri, precipitation gradually declines throughout the fall and early winter, although not as dramatically as in the Northwest. Freezing conditions do not consistently occur until early December. There is a 50% probability of seeing a low temperature of 24° F by November 19, over a week later than in the Northwest. By December 6 there is a 50% chance of seeing a minimum temperature of 16° F. During the past four years, Ted Shanks CA has been frozen-up for an average of 14 days of the duck season. Although the timing of duck use peak is similar between the short-term and long-term averages, during the past five years, duck use increased more sharply and peaked at a higher number compared to the long-term average. Both averages exhibit a similar decline in duck use by early to mid December. Early migrant influx is not as pronounced as in Northwest and North Central Missouri. Mallard use drops off fairly dramatically during mid-December.



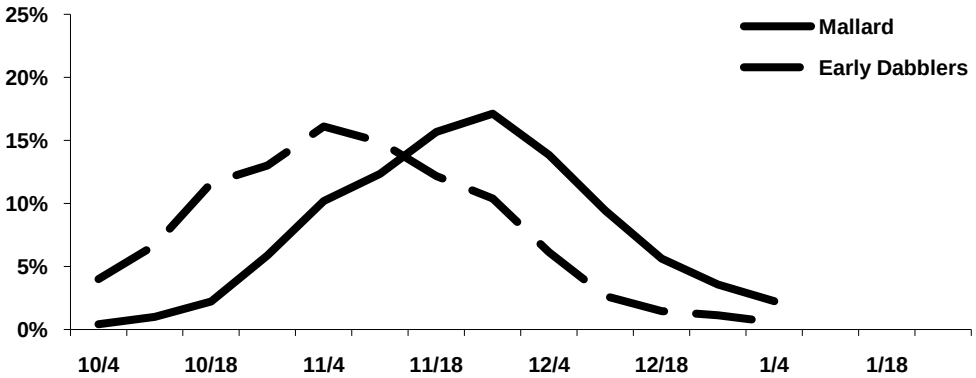
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Saverton, MO.



Percent of duck use by week (Ted Shanks CA, B.K. Leach CA, and Marais Temps Clair CA): 30- year average and 5-year average.

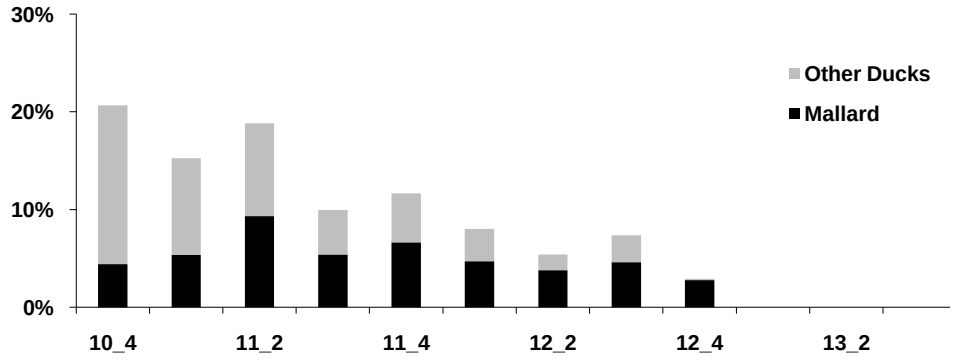


Percent of mallard and early migrant use by week (Ted Shanks CA, B.K. Leach CA and Marais Temps Clair CA): 30-year average.

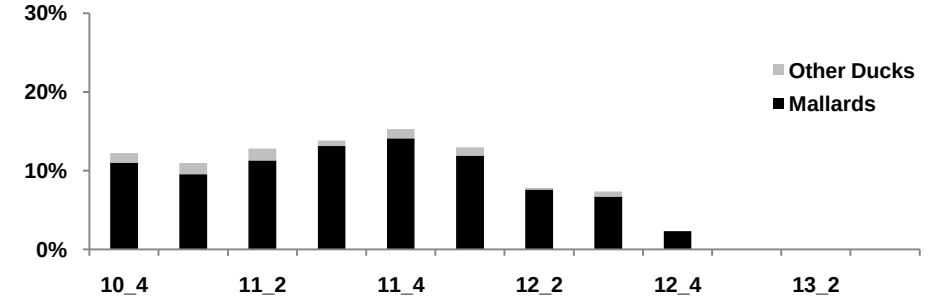


NORTHEAST HARVEST: This region accounted for 13% of the statewide FWS harvest estimate and 9% of statewide band recoveries from 1997-2009. The timing of harvest follows a similar pattern as in North-Central and Northwest Missouri with the greatest proportion of the harvest occurring during early season and declining harvest levels during late season with the onset of freeze-up. For example, hunters harvested slightly more than 20% of the season total during the last week of October and just less than 20% during the second week of November. Early season migrants comprised 80% of the weekly harvest during the last week of October; however, by the second week of November the bag was nearly 50% mallard and 50% other species of ducks. The potential for late season "boom or bust" hunting is present through all of North Missouri. For example, in 2009 harvest peaked during the first week of December at Ted Shanks CA then declined dramatically as wetlands froze. In 2001, a much milder year, harvest was maintained through December and exceeded that experienced in November.

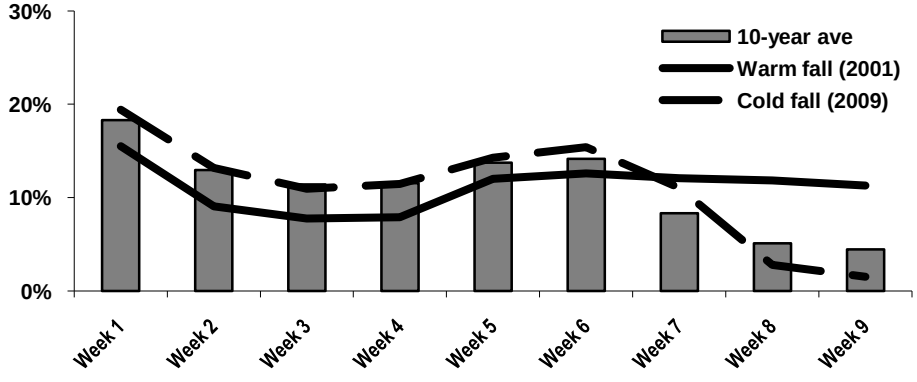
Average daily harvest per week in the Northeast Region based on FWS harvest estimates: 1997-2009.



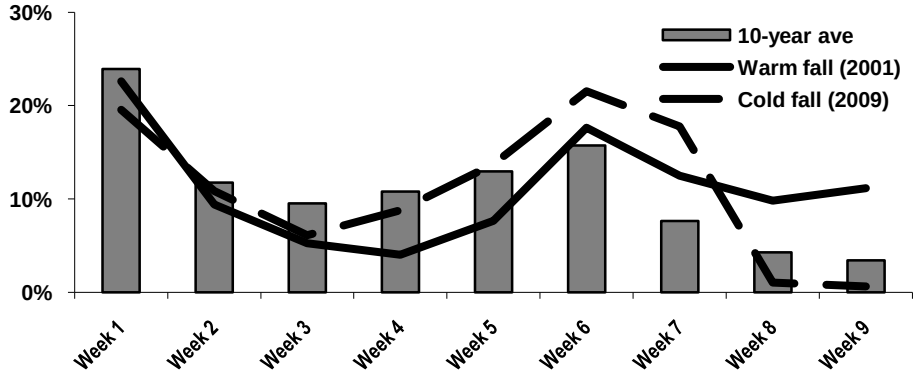
Average daily band recoveries per week in the Northeast Region: 1997-2009 (n=765).



Percent of CA daily hunter trips by week of season at Ted Shanks CA: 2000-2009.

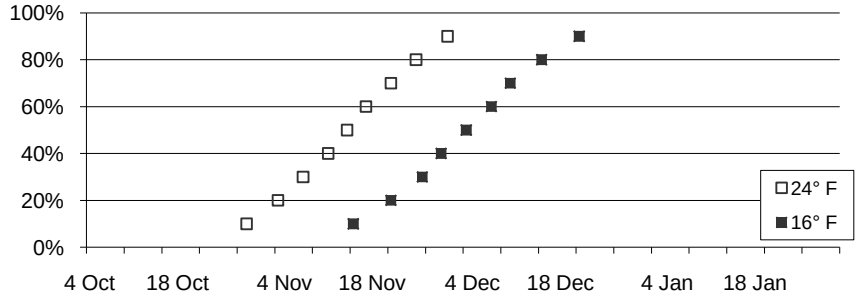


Percent of CA daily harvest by week of season at Ted Shanks CA: 2000-2009.

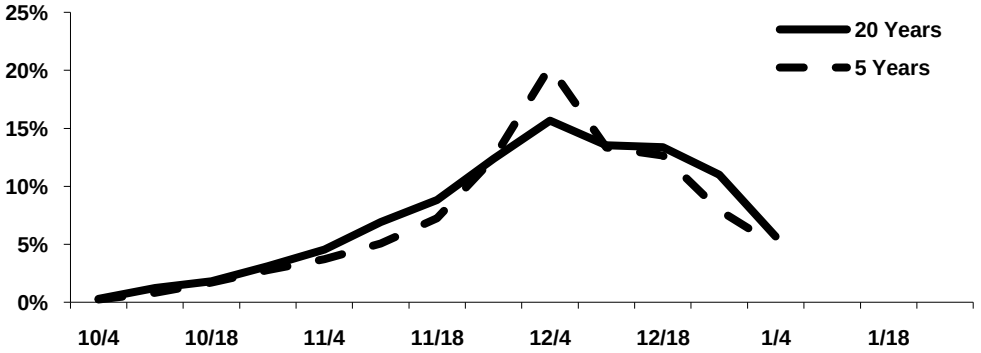


MISSOURI RIVER WEST: Precipitation patterns in the Missouri River West Region are similar to Northwest Missouri, only greater in magnitude. On average, freezing conditions occur a few days later than in the Northwest and a few days earlier than in the Northeast. There is a 50% probability of seeing a low temperature of 24° F by November 14, and by December 3 there is a 50% chance of seeing a minimum temperature of 16° F. During the past four years, Grand Pass CA has averaged nearly 18 days of the duck season where the area is ice covered. Peak duck use is higher for the 5-year average as compared to the 20-year average although timing of the peaks is similar. Late season use associated with Grand Pass CA is apparent in the Missouri River West Region. As expected, use during December is primarily by mallards.

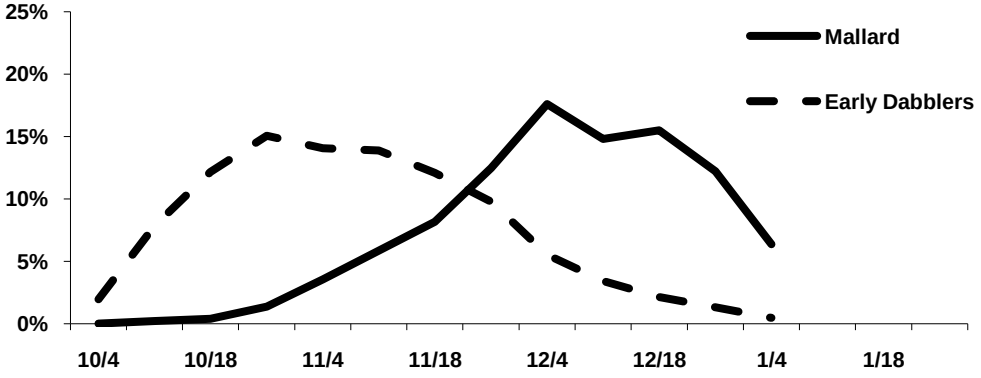
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Marshall, MO.



Percent of duck use by week (Grand Pass CA): 20- year average and 5-year average.

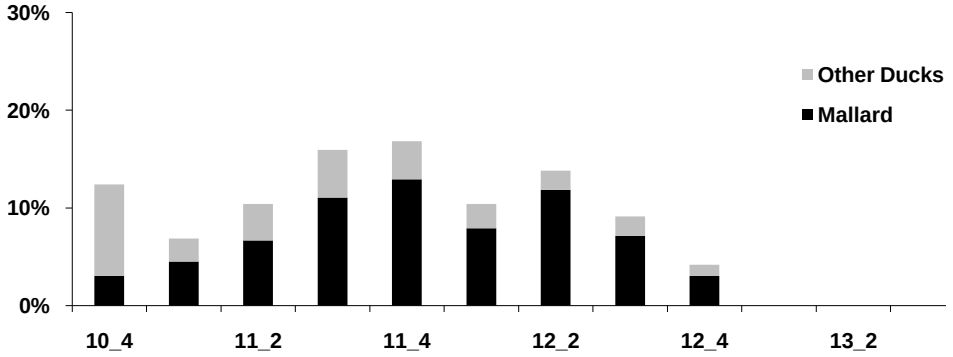


Percent of mallard and early migrant use by week (Grand Pass CA): 20-year average.

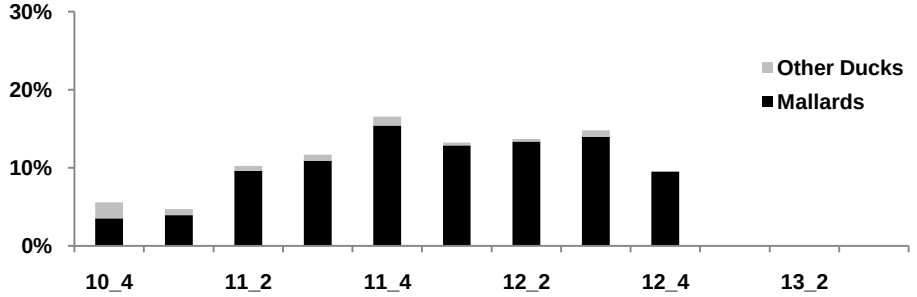


MISSOURI RIVER WEST HARVEST: This region accounted for 7% of the statewide FWS harvest estimate and 9% of statewide band recoveries from 1997-2009. Although there is a modest peak in harvest the last week of October, harvest in the Missouri River West region generally peaks in late November and early December as indicated by both the FWS harvest estimate and band recoveries. Based on FWS estimates, 32% of the 1997-2009 harvest occurred during the last two weeks in November. Early migrants comprised 75% of the weekly harvest in late October and by the fourth week of November harvest composition shifted to 77% mallards. Harvest at Grand Pass followed this same general pattern; however, while harvest declines at Grand Pass due to ice conditions, harvest in deep water habitat and surrounding crop fields likely continues into late season. Harvest levels are maintained in mild years as illustrated by harvest in 2001.

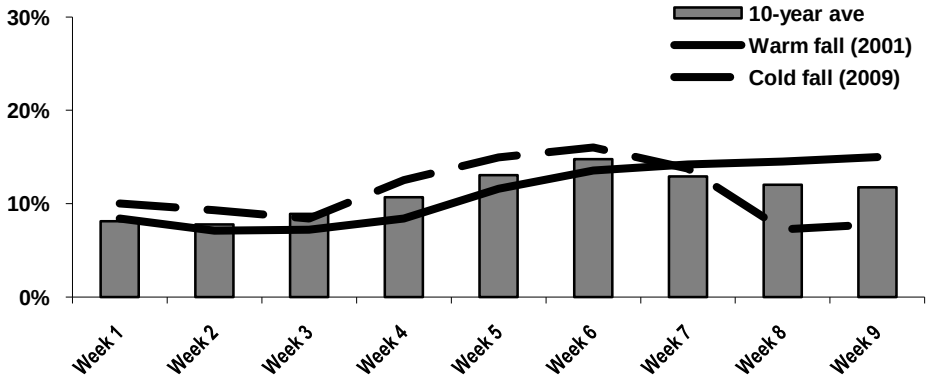
Average daily harvest per week in the Missouri River West Region based on FWS harvest estimates: 1997-2009.



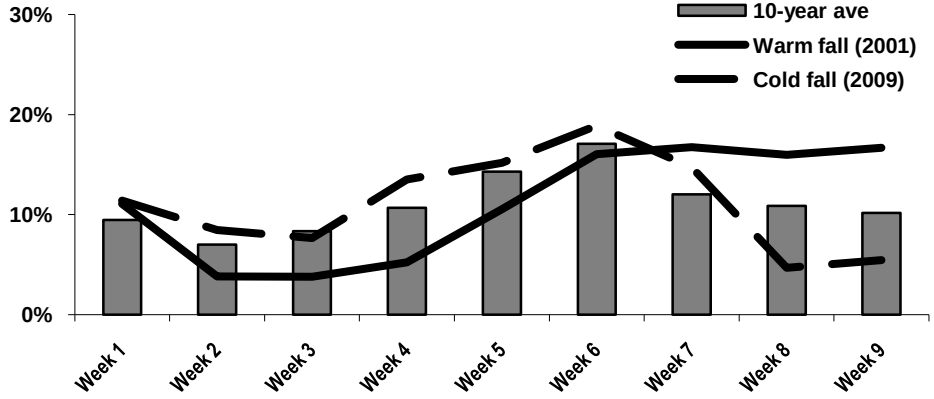
Average daily band recoveries per week in the Missouri River West Region: 1997-2009 (n=770).



Percent of CA daily hunter trips by week of season at Grand Pass CA: 2000-2009.

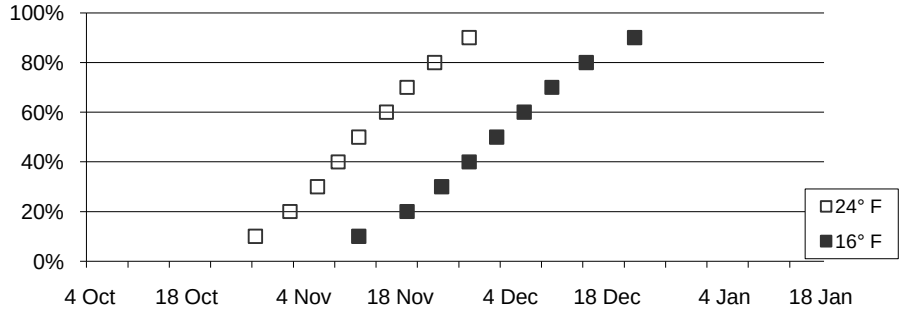


Percent of CA daily harvest by week of season at Grand Pass CA: 2000-2009.

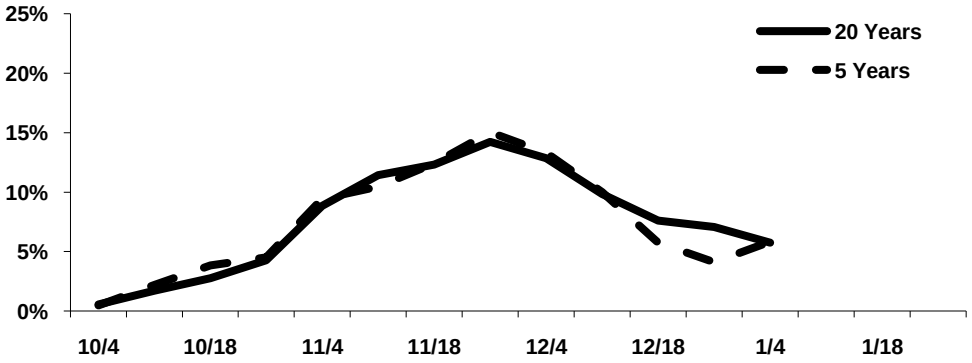


MISSOURI RIVER EAST: Precipitation patterns in the Missouri River East Region are similar to those found in the Missouri River West Region. On average, freezing conditions occur a few days later than in the Northwest and a few days earlier than in the Northeast. There is a 50% probability of seeing a low temperature of 24° F by November 12, and by December 2 there is a 50% chance of seeing a minimum temperature of 16° F. Because this region is mainly in the Middle Zone, shallow water hunters have lost more days to freeze-up than hunters in Missouri River West Region. Over the past five years, Eagle Bluffs has been frozen up for an average of nearly 20 days each season. As expected, use during December is primarily by mallards.

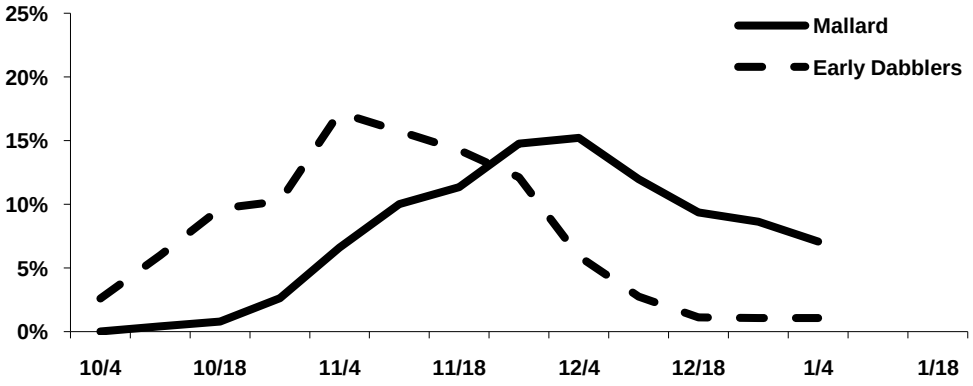
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Columbia, MO.



Percent of duck use by week (Eagle Bluffs CA): 20- year average and 5-year average.

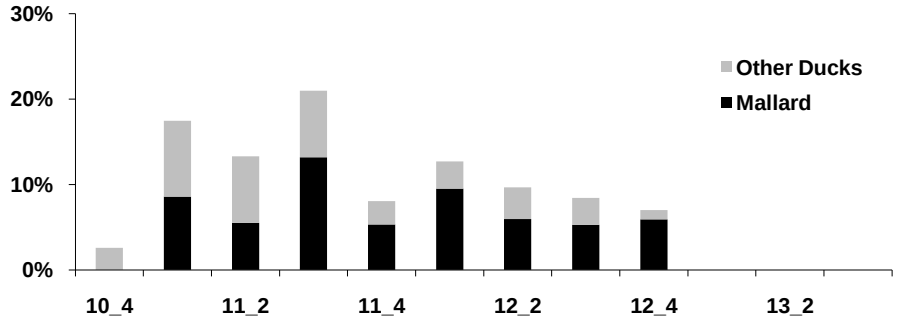


Percent of mallard and early migrant use by week (Eagle Bluffs CA): 20-year average.

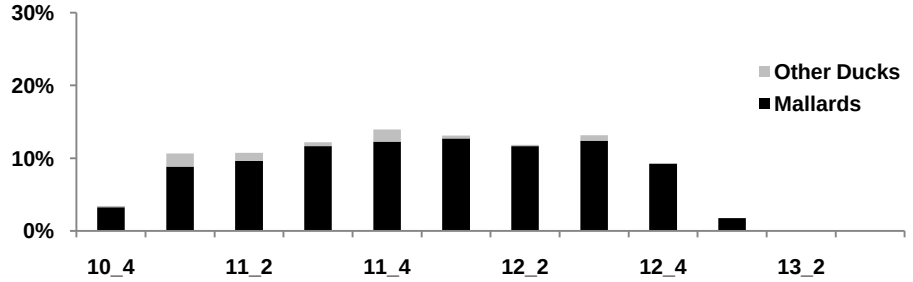


MISSOURI RIVER EAST HARVEST: This region accounted for 3% of the statewide FWS harvest estimate and 6% of statewide band recoveries from 1997-2009. Harvest in the Missouri River East region generally peaks in mid- to late November as indicated by both the FWS estimate and band recoveries. A decline in harvest last season is likely associated with freeze-up. Harvest at Eagle Bluffs follows this same general pattern as illustrated by the sharp, late-season decline in harvest during 2009, a harsh winter, whereas late-season harvest remained steady during 2001, a mild winter.

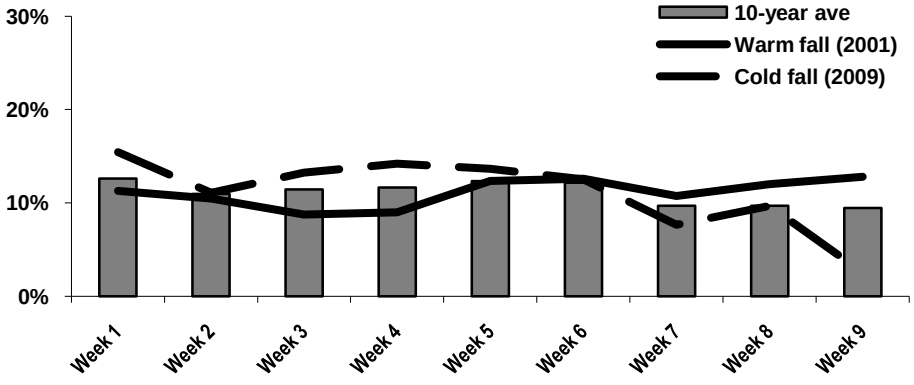
Average daily harvest per week in the Missouri River East Region based on FWS harvest estimates: 1997-2009.



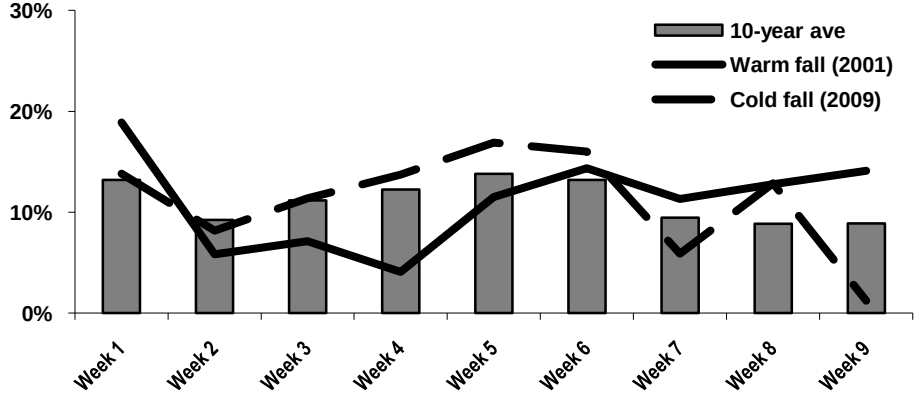
Average daily band recoveries per week in the Missouri River East Region: 1997-2009 (n=467).



Percent of CA daily hunter trips by week of season at Eagle Bluffs CA: 2000-2009.

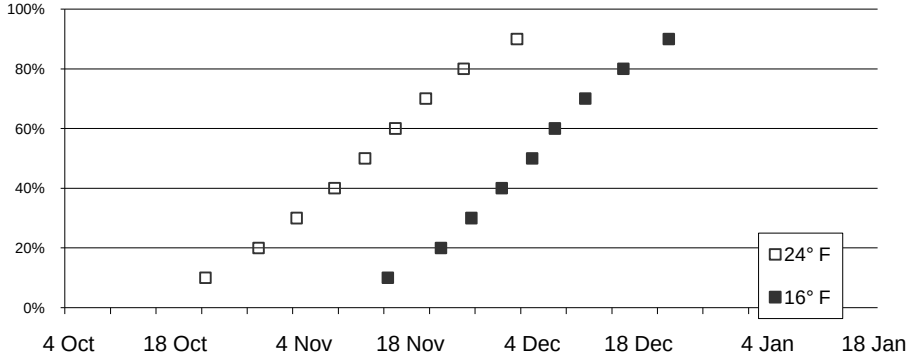


Percent of CA daily harvest by week of season at Eagle Bluffs CA: 2000-2009.

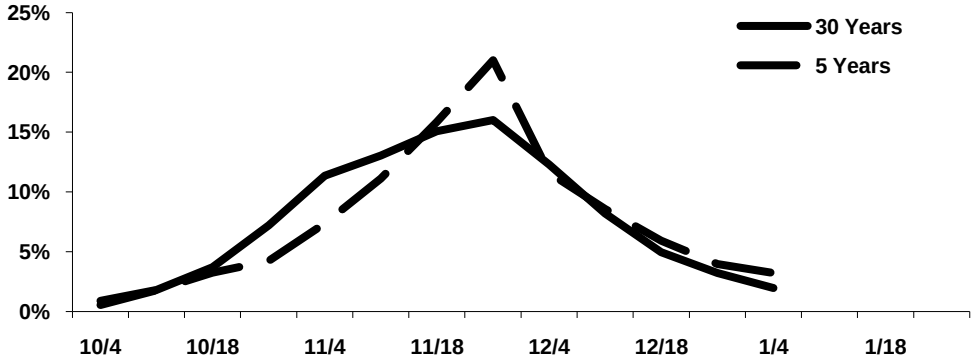


ST. CHARLES COUNTY: As in the rest of North Missouri, precipitation gradually declines throughout the fall and early winter. On average freezing conditions occur a few days later than Northwest Missouri. The 50% probability of seeing a low temperature of 24° F occurs by November 12, and by December 4 there is a 50% chance of seeing a minimum temperature of 16° F. During the past four years, B.K. Leach CA has been frozen for an average of nearly 15 days of each season. Duck numbers at B.K. Leach CA and Marais Temps Clair CA peak from late November through early December, although the five-year average indicates duck numbers have built up more sharply and peaked at a higher number than the long-term average. The peak for early migrants occurs in late October and early November.

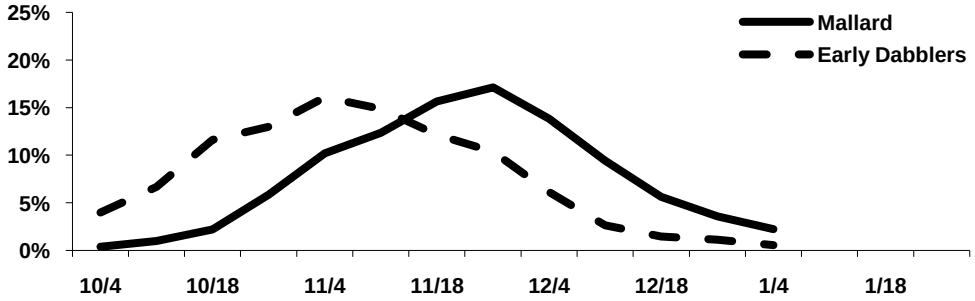
Probability (%) that a temperature of 24° F and 16° F will be reached by date at St. Charles, MO.



Percent of duck use by week (B.K. Leach CA and Marais Temps Clair CA): 30-year average and 5-year average.

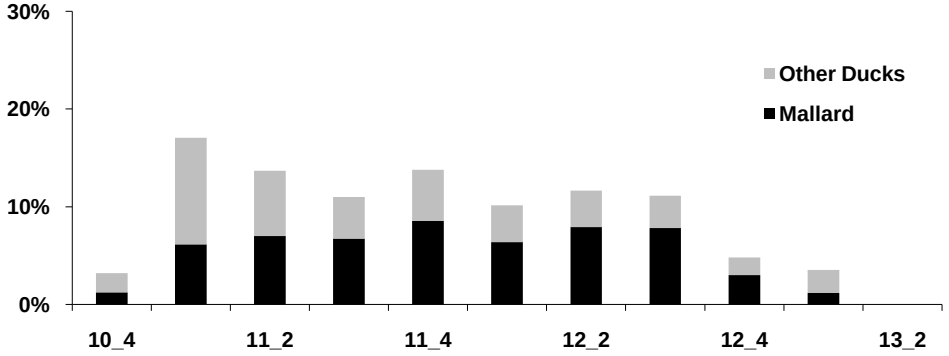


Percent of mallard and early migrant use by week (B.K. Leach CA nd Marais Temps Clair CA): 30-year average.

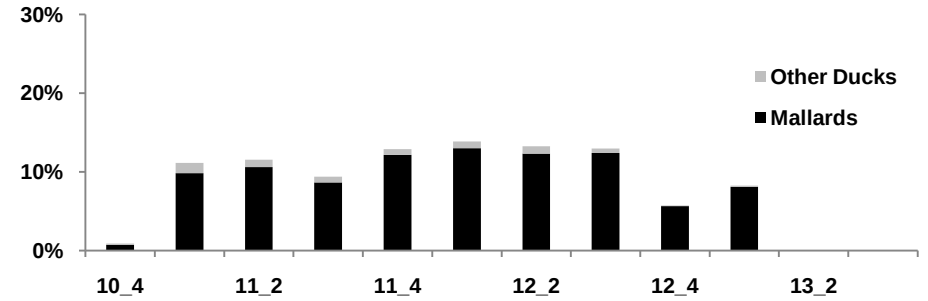


ST. CHARLES COUNTY HARVEST: Although this region includes only one county, it still accounted for 13% of the statewide FWS harvest estimate and 11% of statewide band recoveries during 1997-2009. Both the FWS harvest and band recovery estimates indicate harvest is relatively consistent through November and early December. Mallards comprised 35% and early dabblers comprised 65% of the harvest that occurred during the first week of November. Mallards accounted for 64% and early season dabblers 36% of the harvest that occurred during the last week of November. Hunting in shallow water habitat as reflected by harvest at B.K. Leach typically declines by mid-December. Band recoveries and FWS harvest estimates indicate that late season harvest also occurs as duck use shifts from shallow water habitat to remaining open water during late season.

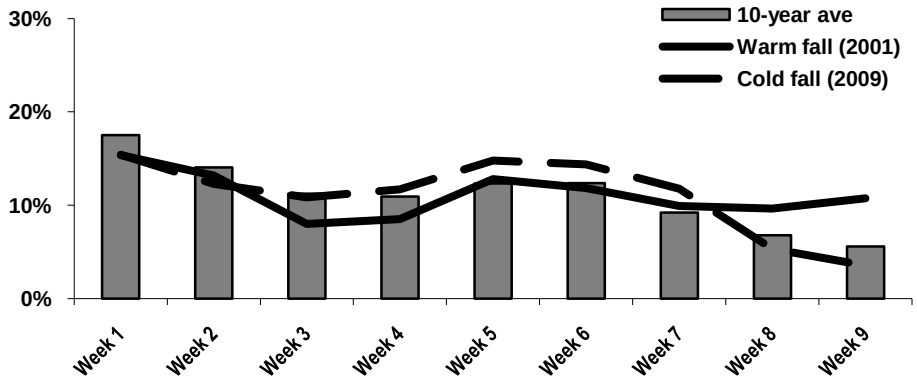
Average daily harvest per week in St. Charles County based on FWS harvest estimates: 1997-2009.



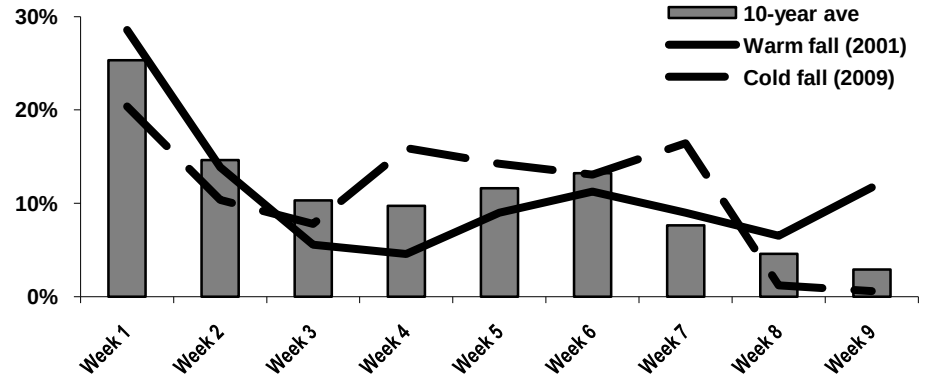
Average daily band recoveries per week in St. Charles County: 1997-2009 (n=909).



Percent of CA daily hunter trips by week of season at B.K. Leach CA: 2000-2009.

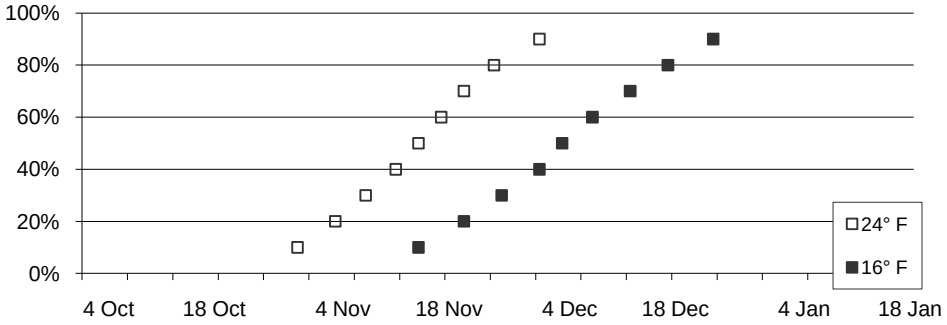


Percent of CA daily harvest by week of season at B.K. Leach CA: 2000-2009.

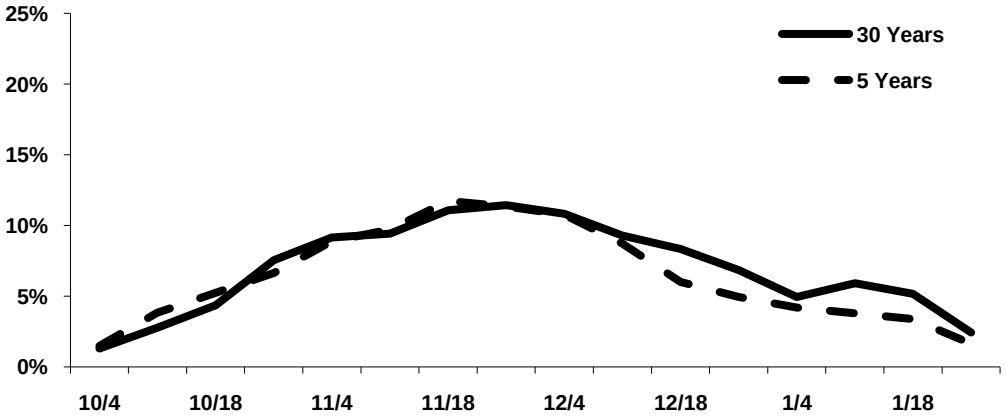


WEST-CENTRAL: Higher mean precipitation is sustained later into the fall in West-Central Missouri than in the North, and average low temperatures occur a few days later. A 50% probability of seeing a low temperature of 24° F occurs by November 14, and a 50% chance of 16° F occurs on December 3. During the past four years, Four Rivers CA and Schell-Osage were frozen an average of nine to ten days each season. Data from Schell-Osage CA and Four Rivers CA indicate the pattern of total duck use during the past five years is similar to the long-term average. A sharp rise in early migrant use occurs by mid-October followed by a more gradual buildup and sustained use by mallards through December during most years.

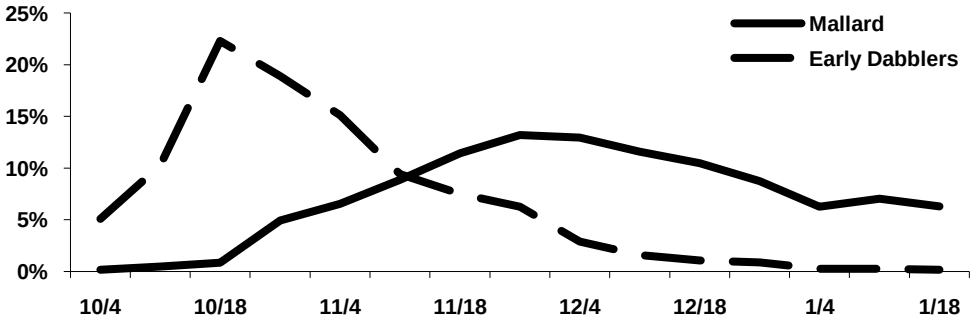
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Appleton City, MO.



Percent of duck use by week (Schell-Osage CA and Four Rivers CA): 30- year average and 5-year average.

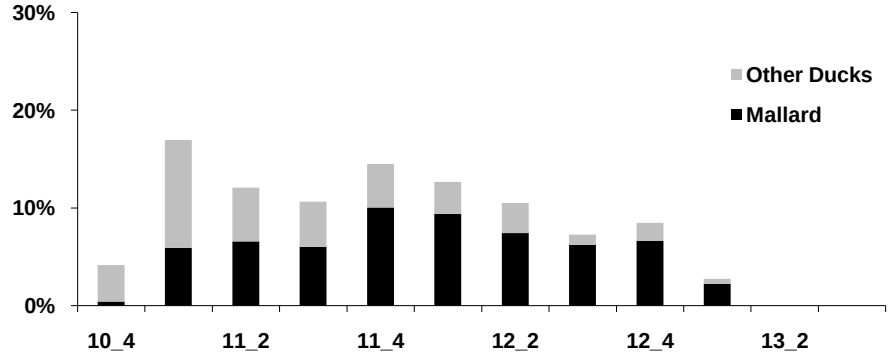


Percent of mallard and early migrant use by week (Schell-Osage CA and Four Rivers CA): 30-year average.

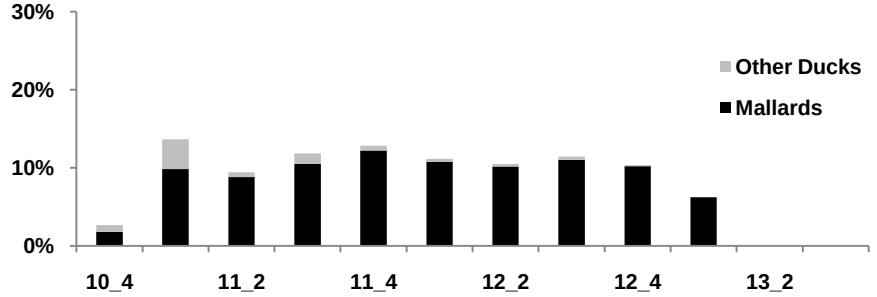


WEST-CENTRAL HARVEST: The West-Central Region accounted for 9% of the statewide FWS harvest estimate and 10% of statewide band recoveries during 1997-2009. FWS harvest estimates, band recoveries, and harvest data from Schell-Osage and Four Rivers suggest that the highest harvest occurs early in the season followed by another smaller peak in late November. The first period coincides with the peak of early migrants whereas the second period coincides with arrival of mallards as indicated by the fact that early dabblers comprised 69% and mallards comprised 31% of the harvest during the first week of November. A shift in species composition occurs throughout November with mallards accounting for 66% and other ducks accounting for 33% of the total harvest by the last week of November. Although not as predictable as in North Missouri, harvest in this region can also be affected by freeze-up during late season.

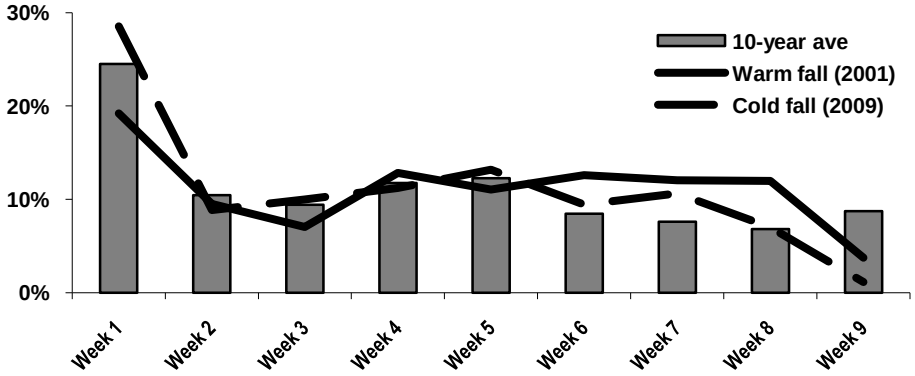
Average daily harvest per week in the West-Central Region based on FWS harvest estimates: 1997-2009.



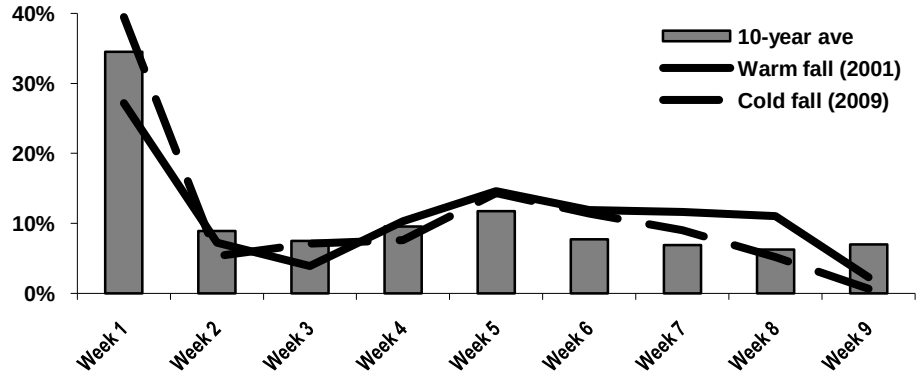
Average daily band recoveries per week in the West-Central Region: 1997-2009 (n=790).



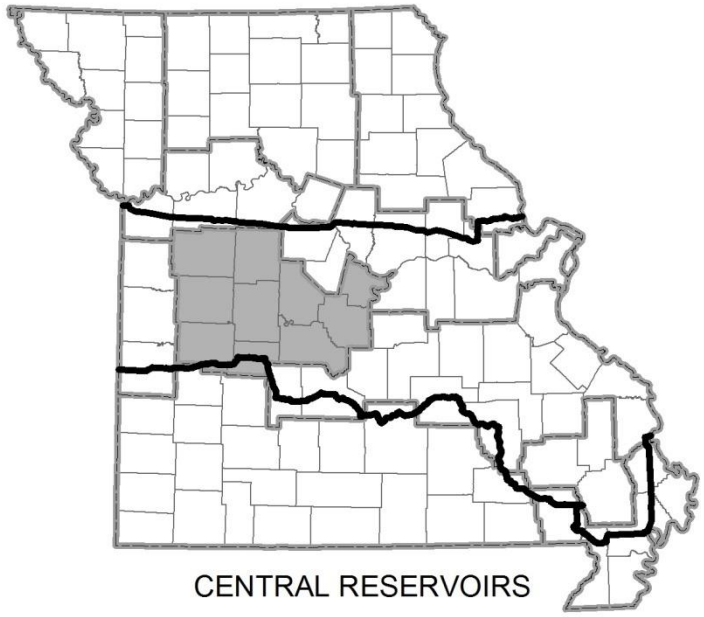
Percent of CA daily hunter trips by week of season at Schell-Osage CA and Four Rivers CA: 2000-2009.



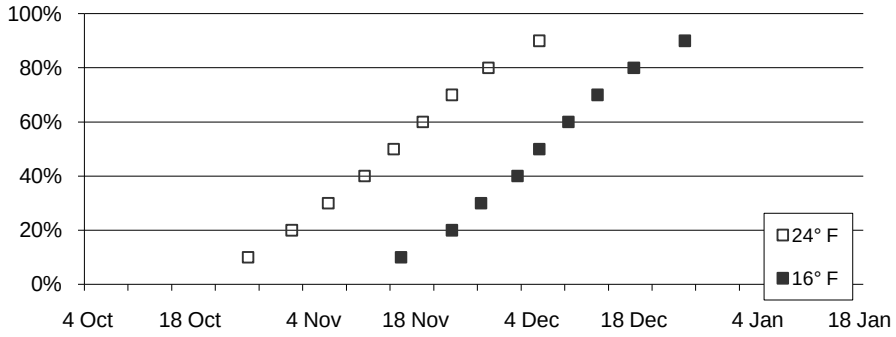
Percent of CA daily harvest by week of season at Schell-Osage CA and Four Rivers CA: 2000-2009.



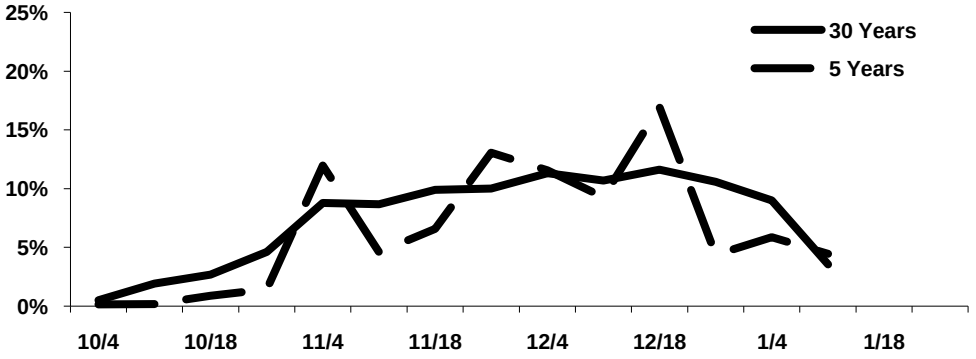
CENTRAL RESERVOIRS: Following a decline in average monthly precipitation from September, rainfall amounts are relatively consistent through November. Mean low temperatures are similar to West Central Missouri, but reservoirs and the Osage River consistently provide open water during late season. A 50% probability of seeing a low temperature of 24° F occurs by November 15, and by December 5 there is a 50% chance of seeing a minimum temperature of 16° F. Duck use builds gradually and is sustained through December into early January. Variation in the 5-year average is likely more related to duck movements to and from Montrose CA due to freeze/thaw conditions rather than general migration patterns of ducks into the region.



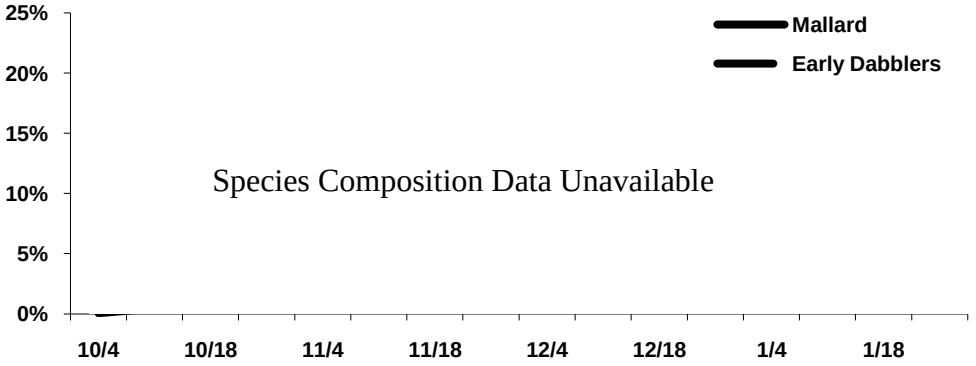
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Eldon, MO.



Percent of duck use by week (Montrose CA): 30- year average and 5-year average.

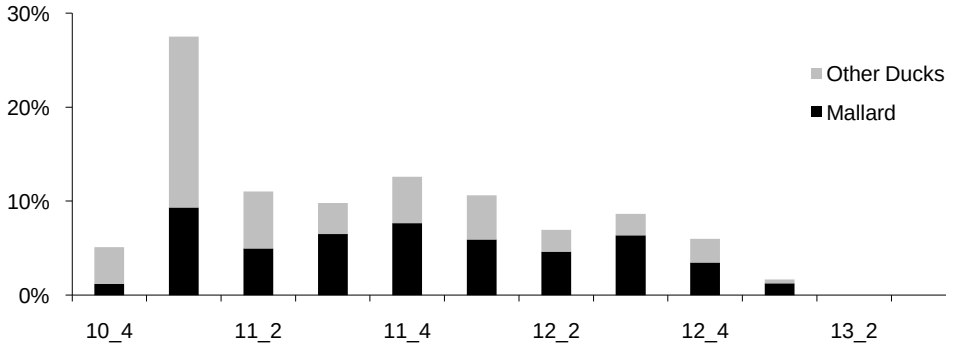


Percent of mallard and early migrant use by week (Montrose CA): 30-year average.

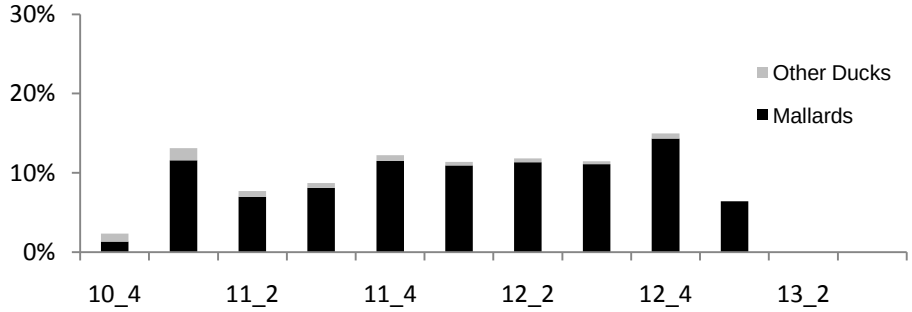


CENTRAL RESERVOIRS HARVEST: This region accounted for 10% of the statewide FWS harvest estimate and 8% of statewide band recoveries from 1997-2009. Nearly 30% of the harvest from 1997-2009 occurred during the first week of November. This early season peak in harvest is partially the result of increased hunter effort during the opening week of season. Already by the first week November, harvest included approximately 33% mallards. Harvest and hunter effort at Montrose in 2009 compared to Conservation Areas with only shallow water highlights the differences in hunter effort and harvest patterns between shallow water and deep water habitat. In 2009, most shallow water froze up by early December. Hunting effort and success was maintained during this time at Montrose, whereas most shallow water hunting had ended.

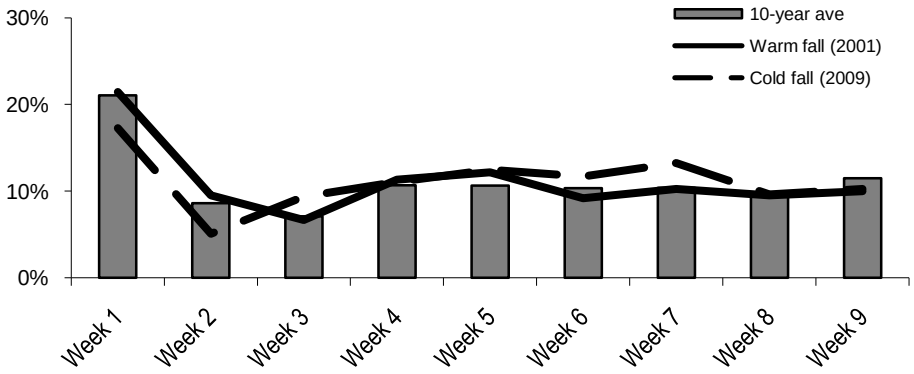
Average daily harvest per week in the Central Reservoirs Region based on FWS harvest estimates: 1997-2009.



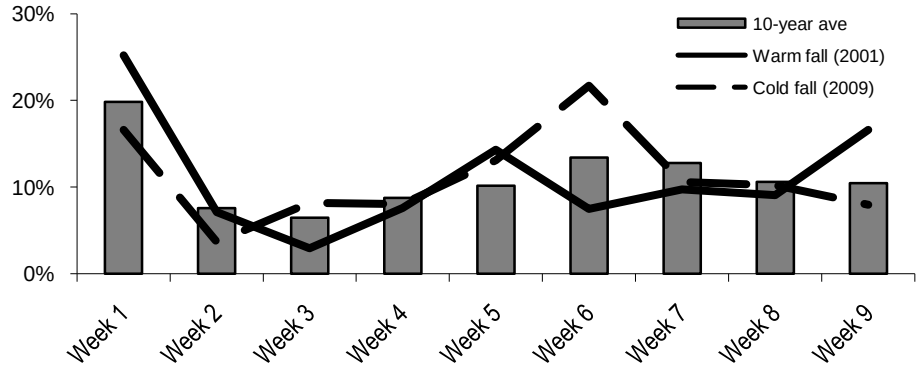
Average daily band recoveries per week in the Central Reservoirs Region: 1997-2009 (n=663).



Percent of CA daily hunter trips by week of season at Montrose CA: 2000-2009.

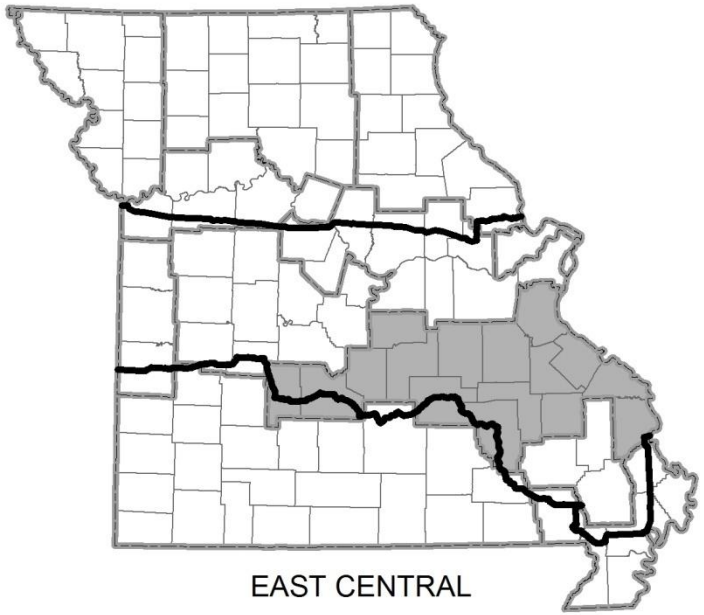


Percent of CA daily harvest by week of season at Montrose CA: 2000-2009.

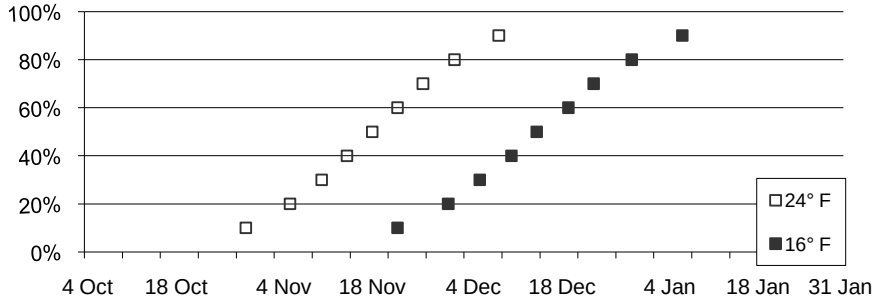


EAST-CENTRAL: The trend of sustained precipitation into the fall is apparent in East-Central Missouri. On average, there is little change from early fall through early December. Although backwaters and floodplain depressions freeze by mid-December, rivers remain open through December in most years. There is a 50% probability of seeing a temperature as low as 24° F by November 18, and 16° F by December 14.

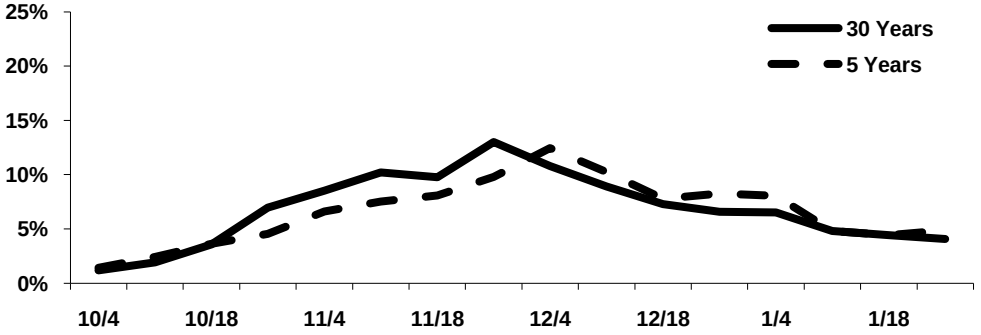
There are no managed wetland areas in this area so population data from Duck Creek, Otter Slough and Mingo are shown to reflect the general pattern of use. However, the lack of managed areas and suitable duck habitat limits sustained duck use throughout the area.



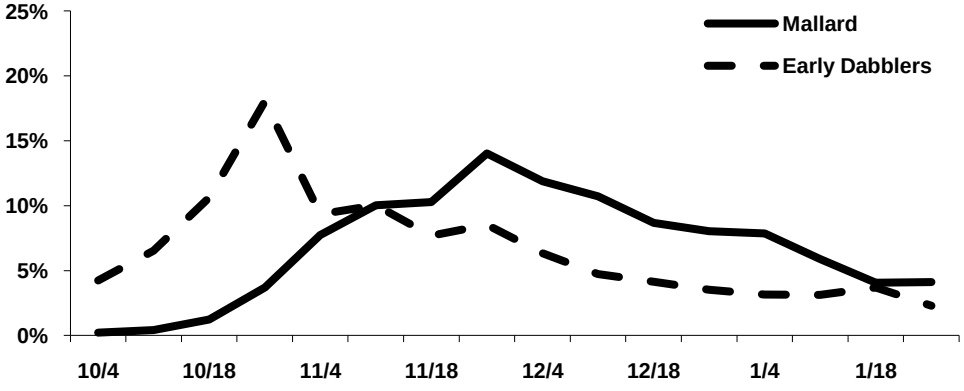
Probability (%) that a temperature of 24° F and 16° F will be reached by a certain date at Cape Girardeau, MO .



Percent of duck use by week (Duck Creek CA, Otter Slough CA, and Mingo NWR): 30- year average and 5-year average.

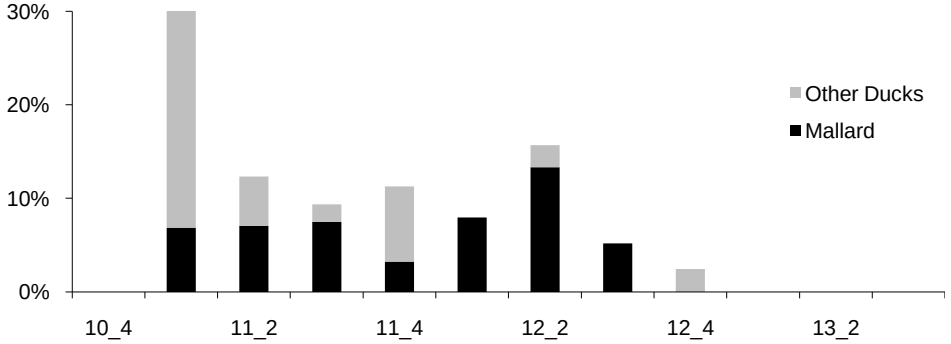


Percent of mallard and early migrant use by week (Duck Creek CA, Otter Slough CA and Mingo NWR): 30-year average.

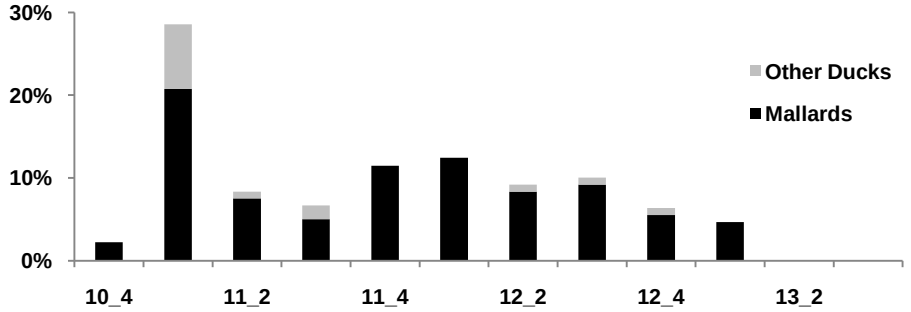


EAST-CENTRAL HARVEST: This region accounted for less than 1% of the statewide FWS harvest estimate and 1% of statewide band recoveries during 1997-2005. Harvest is likely limited to wood ducks and early season migrants during the early season with some mallards later in the season.

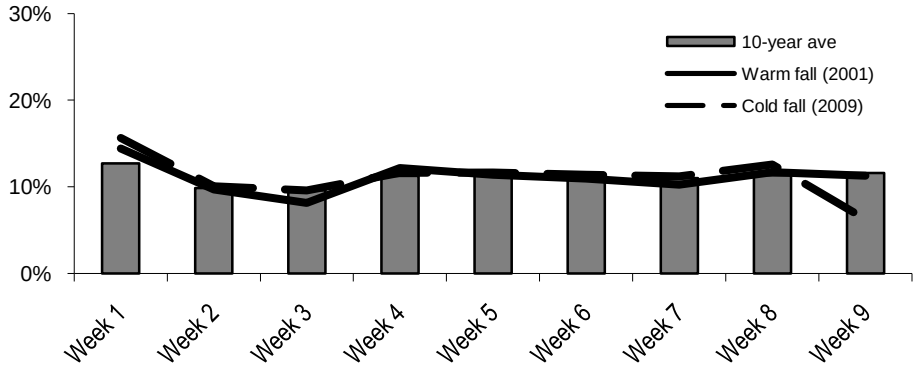
Average daily harvest per week in the East-Central Region based on FWS harvest estimates: 1997-2009.



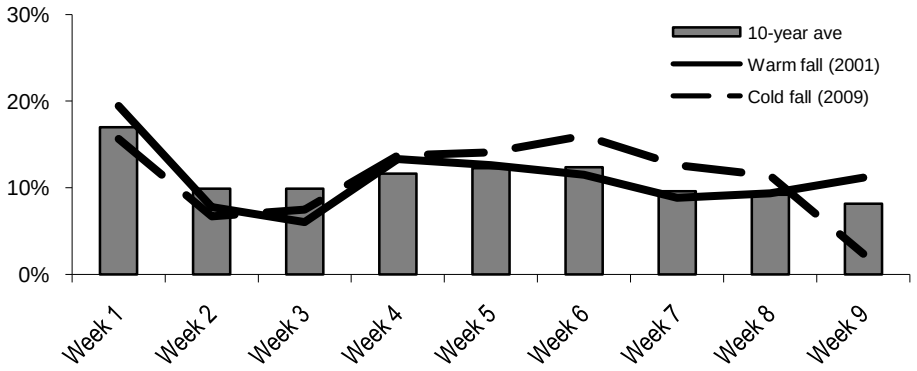
Average daily band recoveries per week in the East-Central Region: 1997-2009 (n=89).



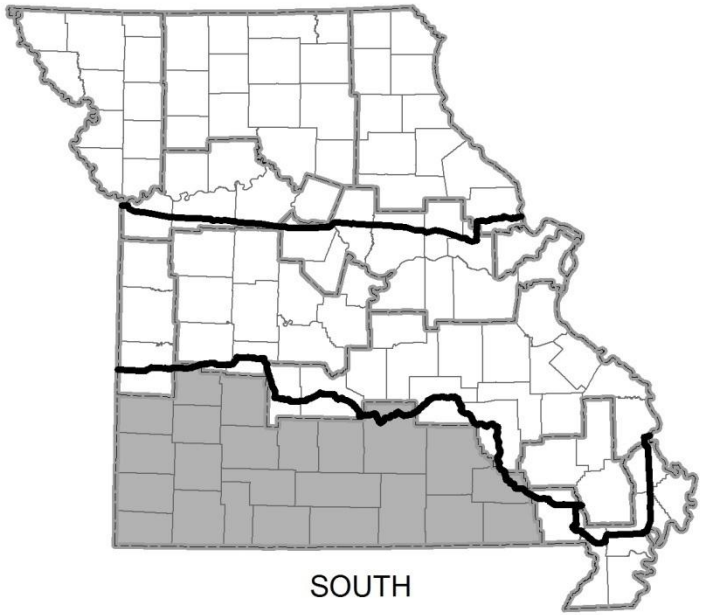
Percent of CA daily hunter trips by week of season at Duck Creek CA and Otter Slough CA: 2000-2009.



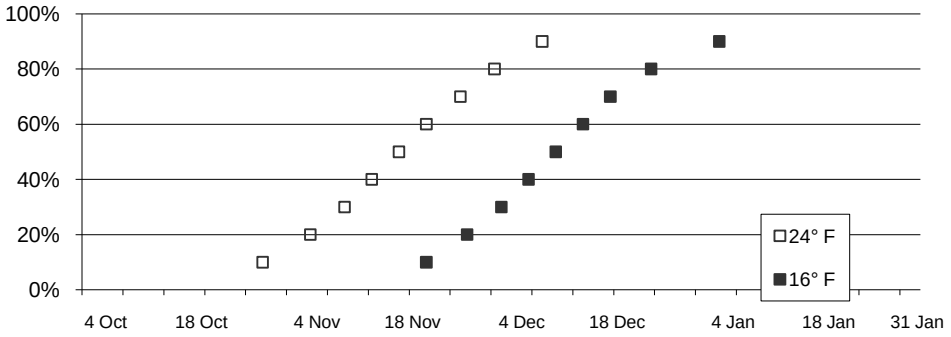
Percent of CA daily harvest by week of season at Duck Creek CA and Otter Slough CA: 2000-2009.



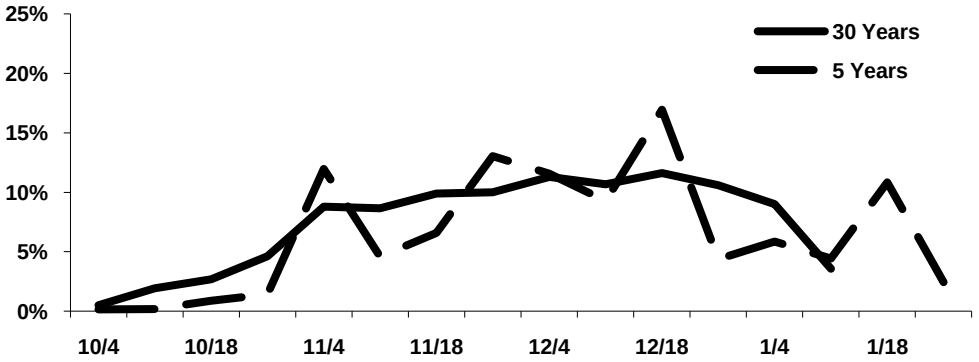
SOUTH: Average precipitation declines in this area from early fall through winter, although September rainfall generally is greater than North Missouri. There is a 50% probability of the temperature falling as low as 24° F by November 16 and dropping to 16° F by December 9. No long-term migration or population data are available for this portion of Missouri; therefore, information from Montrose CA, a deep water reservoir to the north, is used to reflect expectations for duck availability. Shallow water wetlands are found mostly in prairie areas (north and western parts) of this area. Otherwise deep reservoirs, irrigation lakes and rivers provide late season habitat for ducks. Populations of ducks, mallards in particular, remain well into the winter as long as open water and food are available.



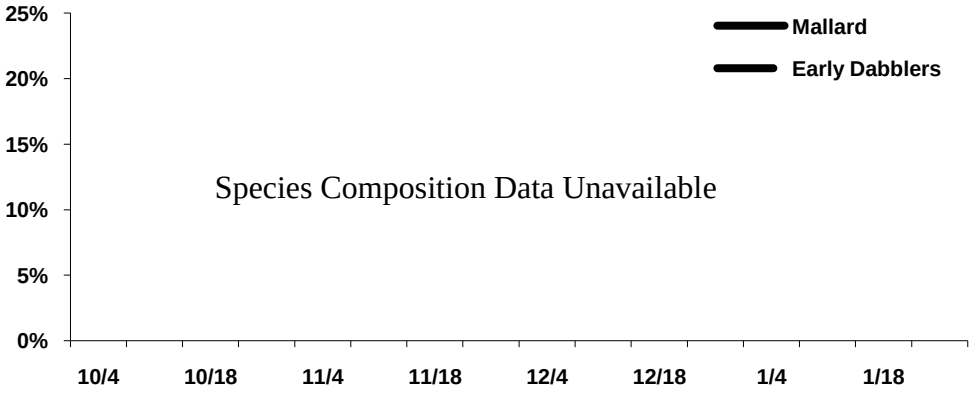
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Joplin, MO.



Percent of duck use by week (Montrose CA): 30- year average and 5-year average.

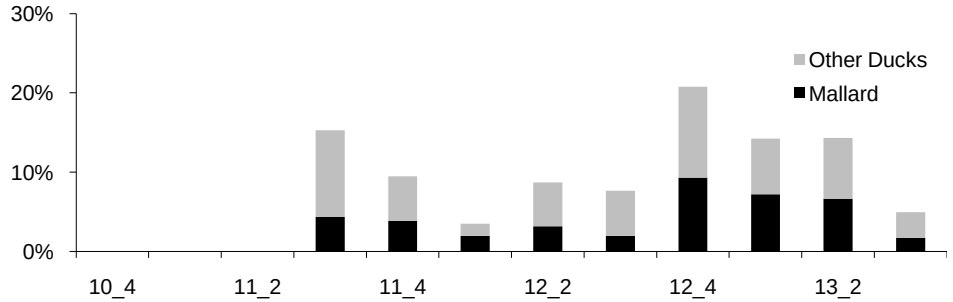


Percent of mallard and early migrant use by week (Montrose CA): 30-year average.

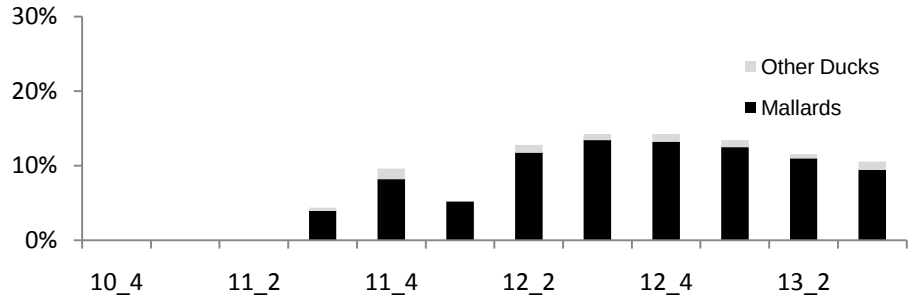


SOUTH HARVEST: South Missouri accounted for 5% of the statewide FWS harvest estimate and 5% of statewide band recoveries during 1997-2009. FWS harvest estimates suggest a peak in mid-November followed by a second peak in late December. Band recoveries suggest more consistent and better hunting during late season.

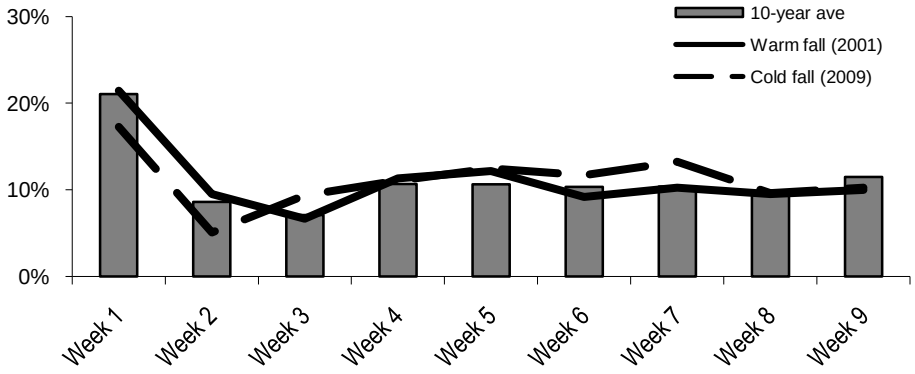
Average daily harvest per week in the South Region based on FWS harvest estimates: 1997-2009.



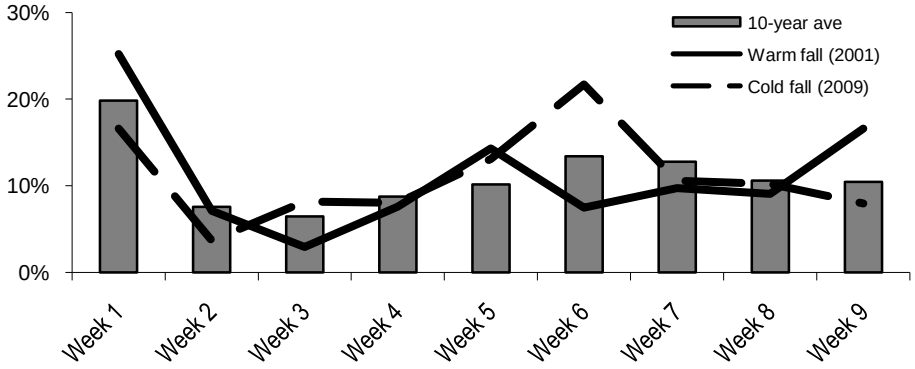
Average daily band recoveries per week in the South Region: 1997-2009 (n=425).



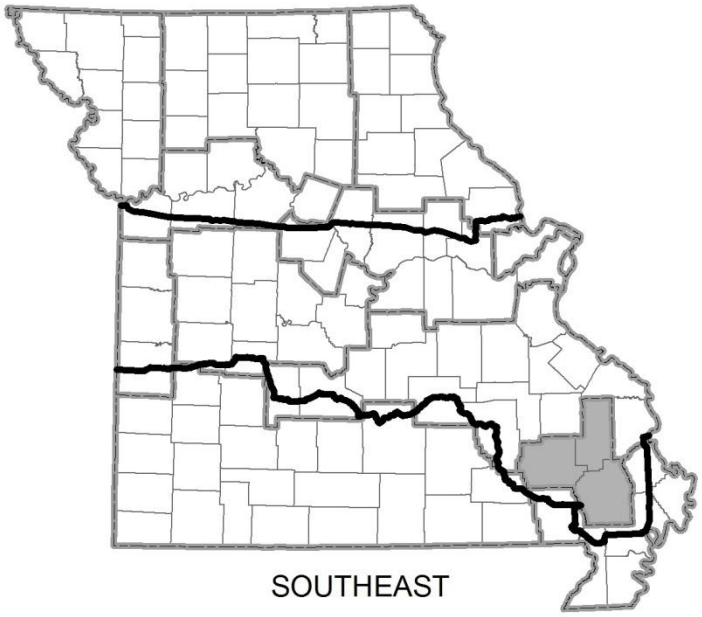
Percent of CA daily hunter trips by week of season at Montrose CA: 2000-2009.



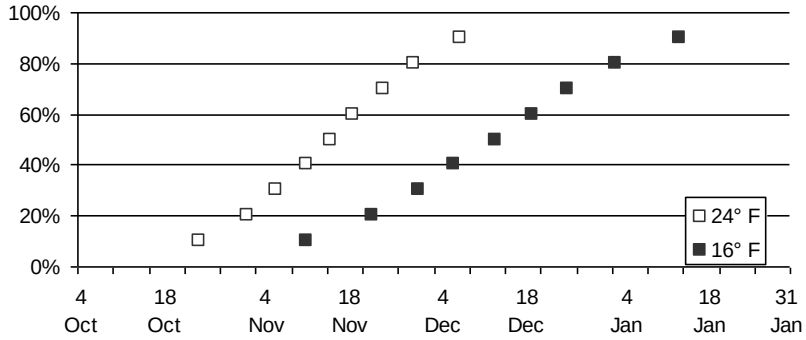
Percent of CA daily harvest by week of season at Montrose CA: 2000-2009.



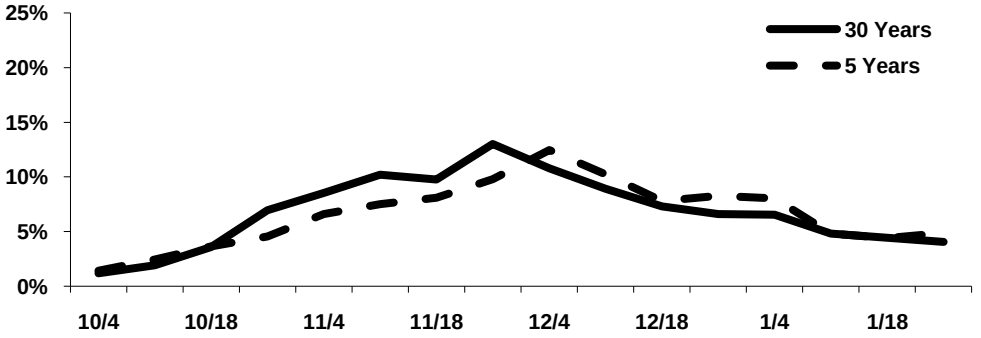
SOUTHEAST: Dry conditions normally prevail through early fall compared to North Missouri. However, increased precipitation occurs during November and December. With increased rainfall and temperatures that remain mild into December, ice conditions do not normally become a factor until after mid-December. Late fall rains can also provide more shallow water habitat and flood green tree reservoirs. However, this newly created late season habitat can also be prone to freeze-up. During the past four years, wetlands at Duck Creek CA and Otter Slough CA have been ice-covered for an average of five to six days per season. A 50% probability for a low temperature of 24° F occurs by November 15 and for a low of 16° F by December 13. A 90% probability of seeing a temperature of 16° F does not occur until January 13, but this is still nearly 2 weeks earlier than Portageville. Duck numbers build steadily through mid-November then decline through December and early January. Duck use patterns are relatively similar between the last five years and the long-term average although the five year average of duck use peaked slightly later than the long-term average. Early migrants peak during mid-October to early November.



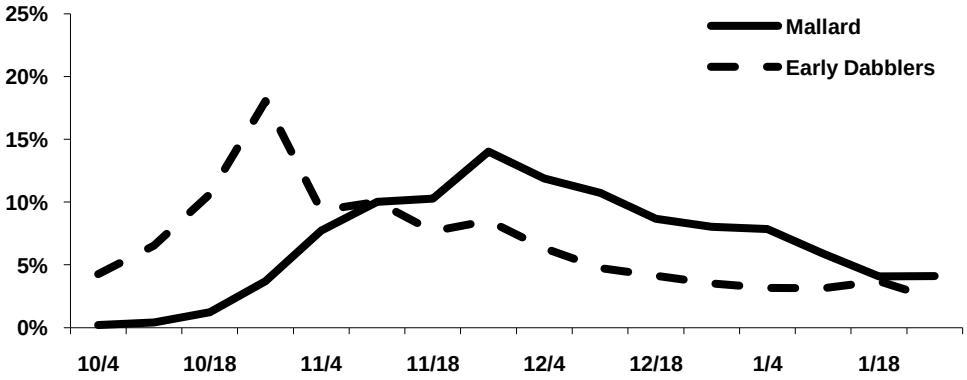
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Advance, MO.



Percent of duck use by week (Duck Creek CA, Otter Slough CA, and Mingo NWR): 30- year average and 5-year average.

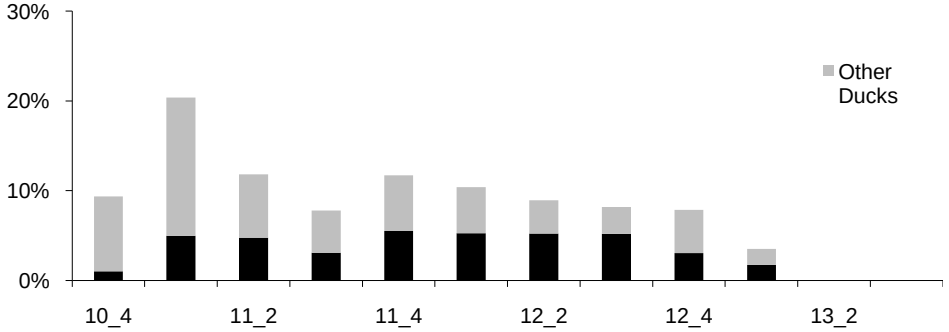


Percent of mallard and early migrant use by week (Duck Creek CA, Otter Slough CA, and Mingo NWR): 30-year average.

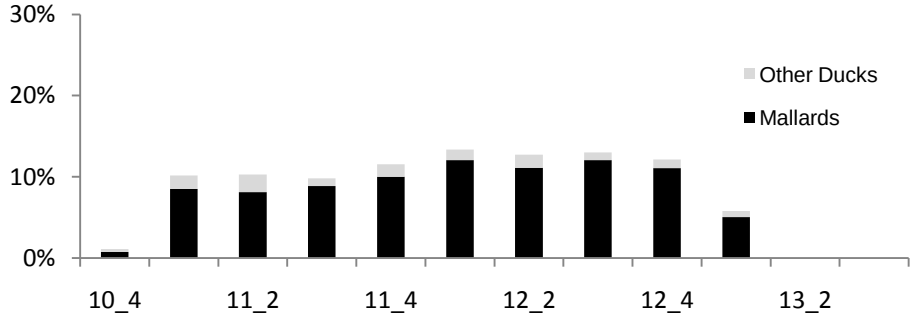


SOUTHEAST HARVEST: Southeast Missouri accounted for 10% of the statewide FWS harvest estimate and 11% of statewide band recoveries during 1997-2009. Approximately 20% of the harvest in this region occurs during the first week of November according the FWS estimates. Large harvest early likely reflects a high level of hunter effort associated with opening weekend, and relative high numbers of early migrant ducks present when the season opens. This is reflected in the species composition as early migrants comprise 66% of the total harvest during the first week in November. During the remainder of the season, harvest is fairly stable with the ratio of mallards to other ducks approximately 50-50. Although the impacts of cold or mild weather are not as severe in this region compared to North Missouri, shallow water freeze-up can still cause a decline in harvest as indicated by the harvest patterns at Duck Creek and Otter Slough in 2009 (a cold year) in which a sharp decline in harvest occurred the last week of the season versus 2001 (a mild year) in which harvest remained relatively stable throughout the season.

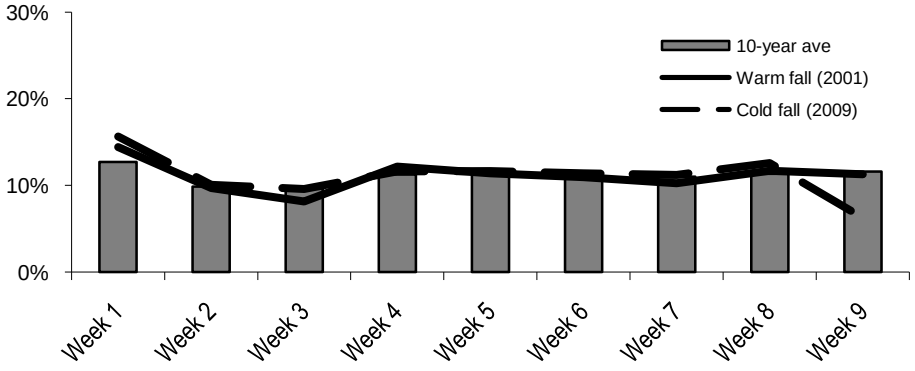
Average daily harvest per week in the Southeast Region based on FWS harvest estimates: 1997-2009.



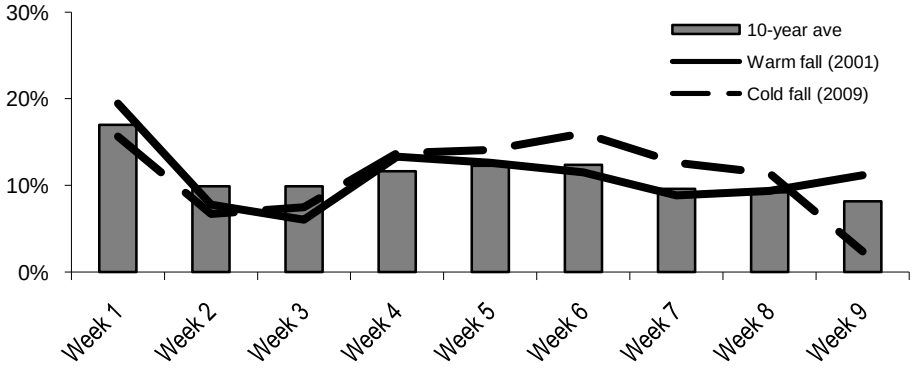
Average daily band recoveries per week in the Southeast Region: 1997-2009 (n=914).



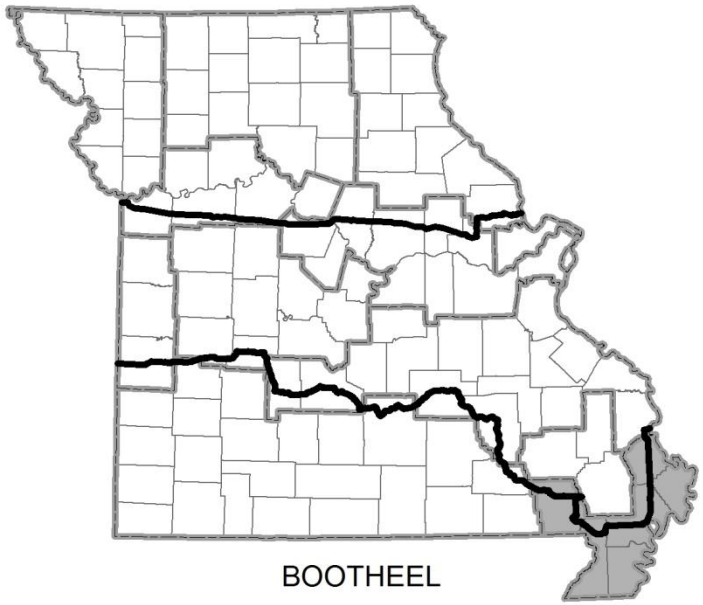
Percent of CA daily hunter trips by week of season at Duck Creek CA and Otter Slough CA: 2000-2005.



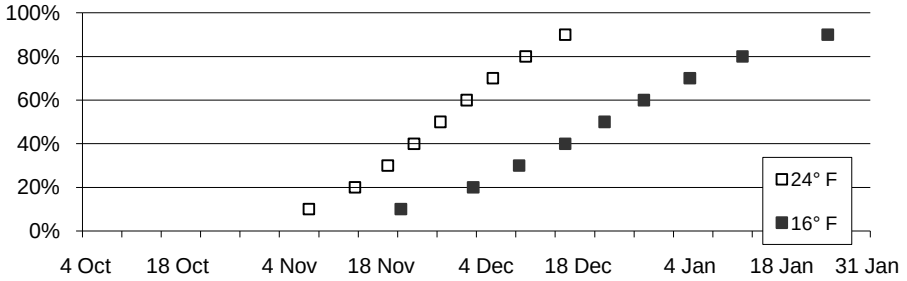
Percent of CA daily harvest by week of season at Duck Creek CA and Otter Slough CA: 2000-2009.



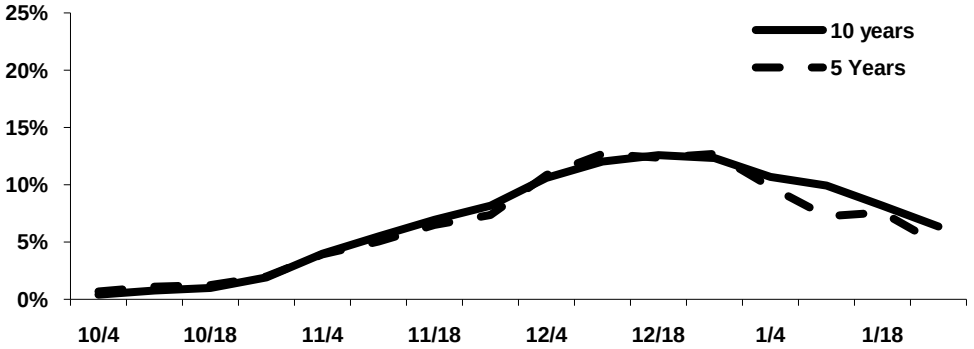
BOOTHEEL: Precipitation patterns reflect the late fall and early winter flooding potential in the Missouri Bootheel. Conditions are normally dry during early fall but rainfall increases in November and December. A 50% probability of seeing a temperature as low as 24° F occurs by November 27, a 50% chance of seeing 16° F does not occur until December 22, and a 90% chance of 16° F does not occur until January 25, nearly 2 weeks later than the Southeast area. Duck use patterns differ from most other areas in Missouri. Late fall and early winter rainfall create "increasing" food availability in wetlands and freeze-up, if it occurs at all, is of short duration. However, during the last four years, wetlands at Ten Mile Pond have been frozen-up for an average of nearly 10 days each season. If forced to leave, ducks often move a short distance only and may return in a few days. A comparison of ten-year and five-year data is shown for Ten Mile Pond CA due to its relatively recent development date. Peak use occurs during December and through mid-January.



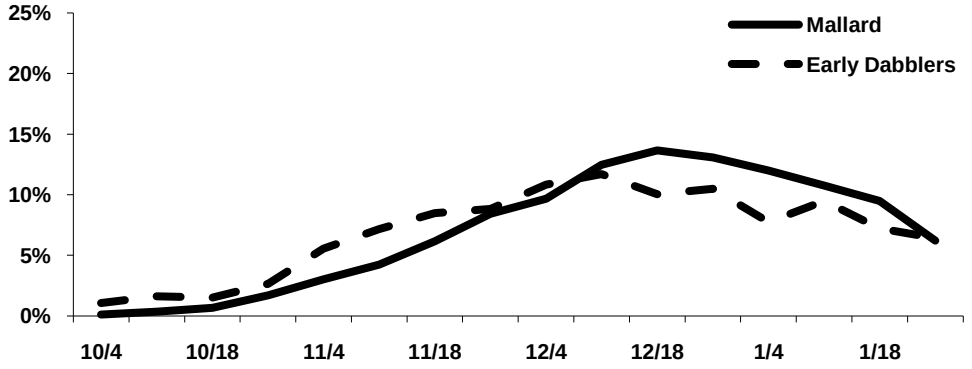
Probability (%) that a temperature of 24° F and 16° F will be reached by date at Portageville, MO.



Percent of duck use by week (Ten Mile Pond CA): 10- year average and 5-year average.

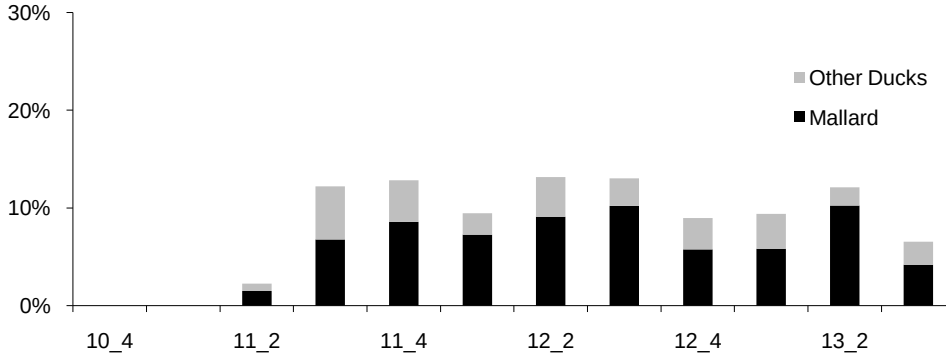


Percent of mallard and early migrant use by week (Ten Mile Pond CA): 10-year average.

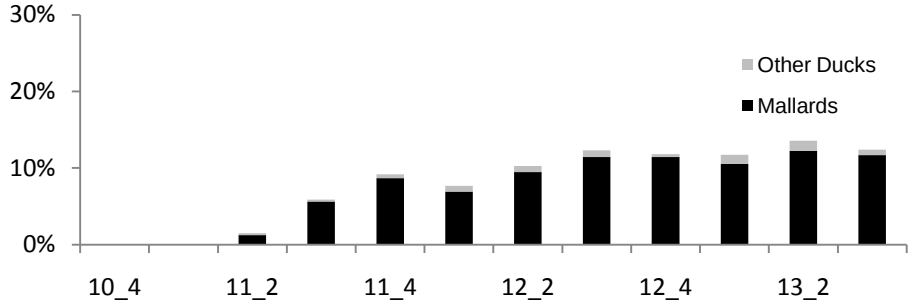


BOOTHEEL HARVEST: The Bootheel accounted for 8% of the statewide FWS harvest estimate and 13% of statewide band recoveries from 1997-2009. Compared to all other regions of Missouri, the Bootheel has the most consistent hunting from the start through the end of season; however, the season opens after many early season migrants have departed Missouri. From a statewide perspective, peak mallard migrations typically occur during the last two weeks of November and the first two weeks of December. Depending on the year, these major migration events may occur before the South Zone season begins and reduce the possibility of hunting "flight days." On the other hand, more habitat is often available later in the season as this is normally a wetter period. Opportunity for late season success is also made possible as birds redistribute in response to freeze/thaw conditions. This is the only region in which mallards comprise the majority of the weekly harvest throughout the season.

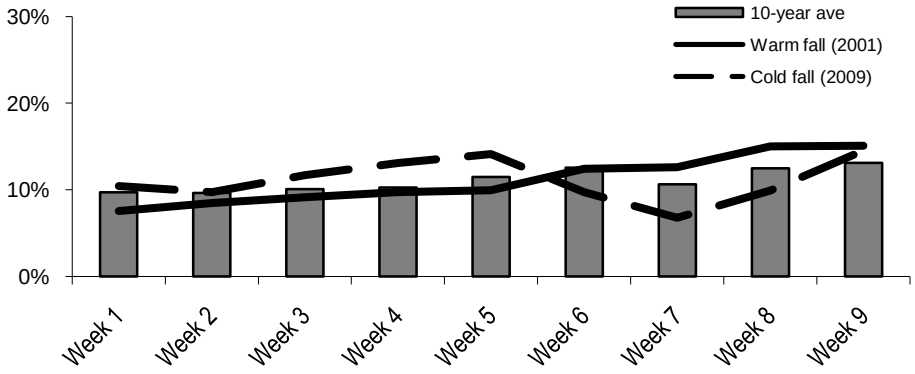
Average daily harvest per week in the Bootheel Region based on FWS harvest estimates: 1997-2009.



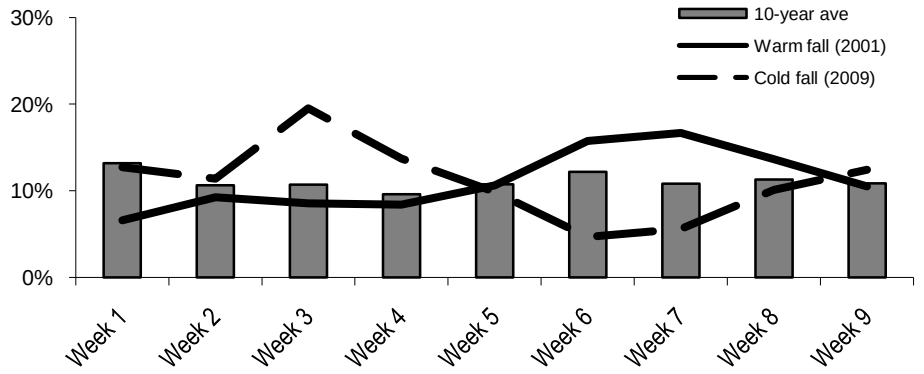
Average daily band recoveries per week in the Bootheel Region: 1997-2009 (n=1,085).



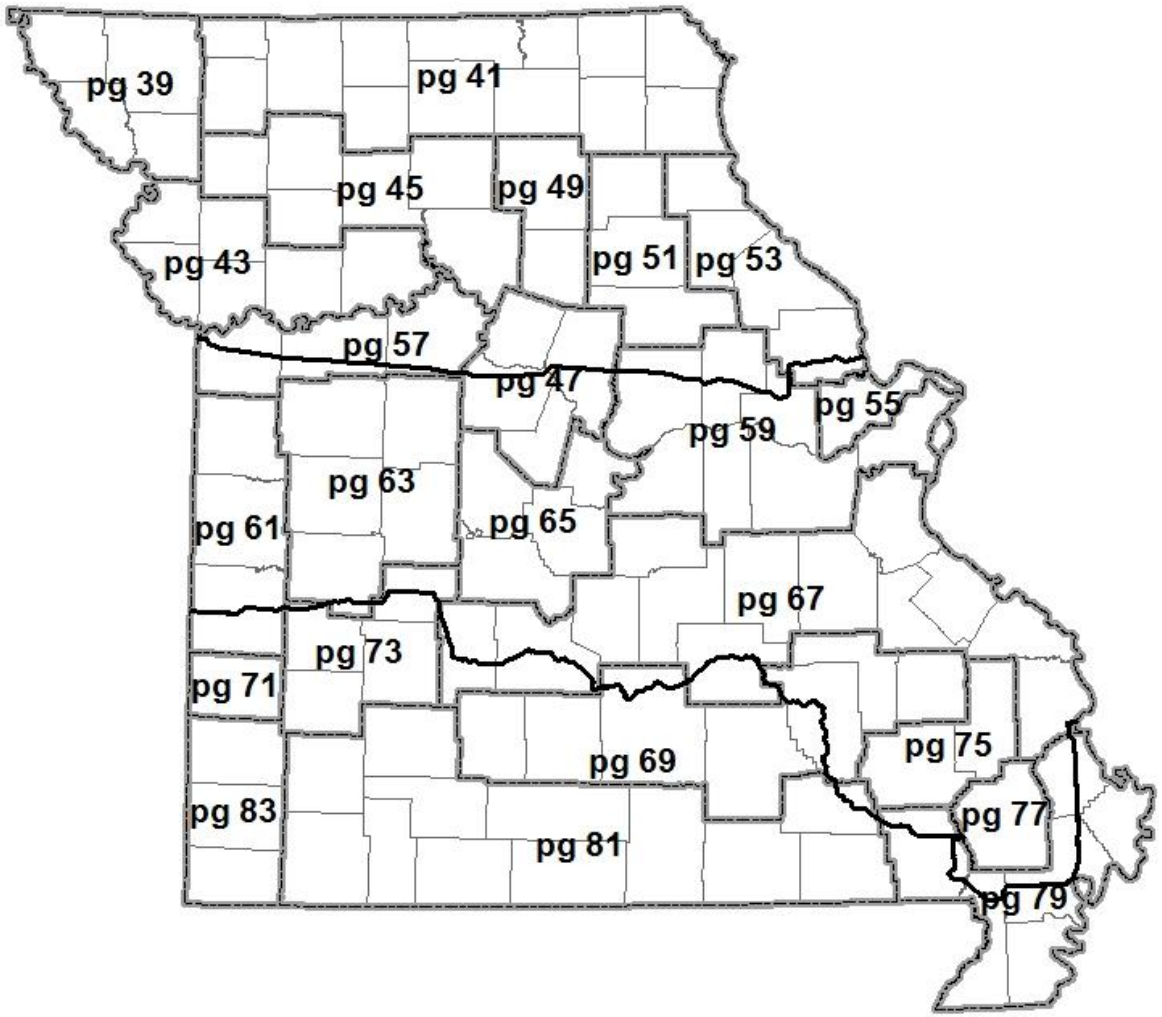
Percent of CA daily hunter trips by week of season at Ten Mile Pond CA: 2000-2009.



Percent of CA daily harvest by week of season at Ten Mile Pond CA: 2000-2009.

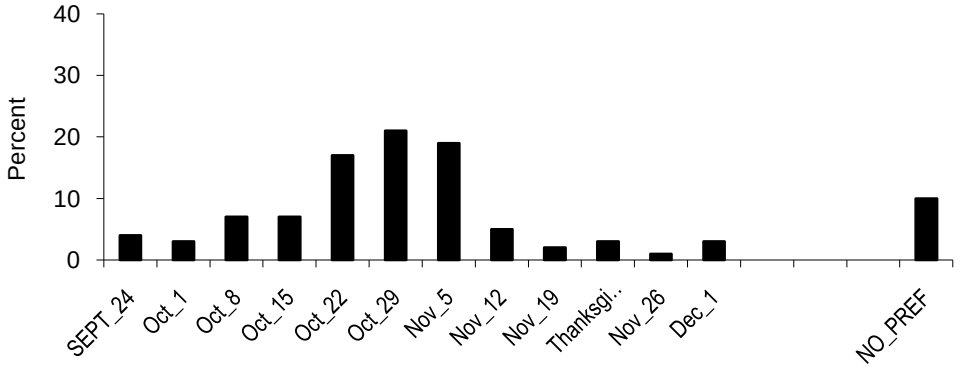


HUNTER OPINIONS ABOUT SEASON DATES AND ZONE BOUNDARIES IN 23 REGIONS OF MISSOURI

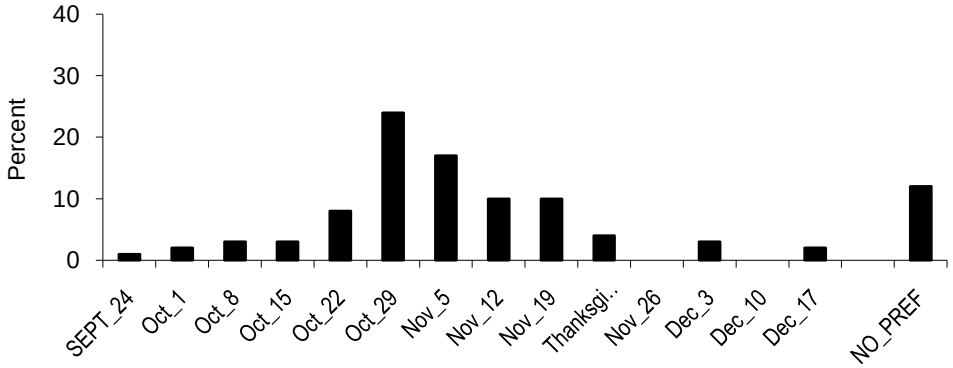


SQUAW CREEK: Until development of Bob Brown CA in 1992 and Nodaway Valley in 2002, primary hunting sites were on private wetlands associated with Squaw Creek NWR and Missouri River floodplain wetlands. Field hunting is now becoming more popular in this region. Potential for freeze-up during a 60-day season is most likely in the Squaw Creek Region. Hunter 60-day season date preferences slightly favor the current opening date of October 29 (21%); whereas, 17% preferred the season to open a week earlier on October 22 and 19% preferred the season to open a week later on November 5. In the event of a 45-day season, the most preferred option (24%) was to retain the same opening date, but close on December 12. Hunter opinion was more varied in regards to the 30-day season with 21% of respondents suggesting the season should open November 5, 14% preferring October 29, and 14% selecting November 19.

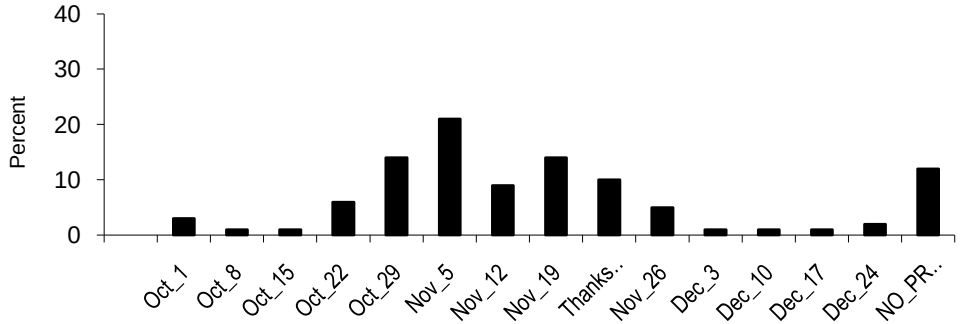
Preferred day for 60-day season to open for those who primarily hunted the Squaw Creek Region (n=150).



Preferred day for 45-day season to open for those who primarily hunted the Squaw Creek Region (n=143).

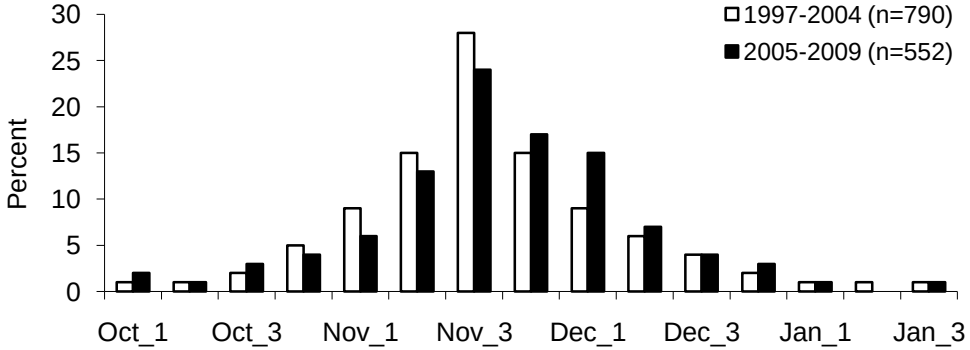


Preferred day for 30-day season to open for those who primarily hunted the Squaw Creek Region (n=140).

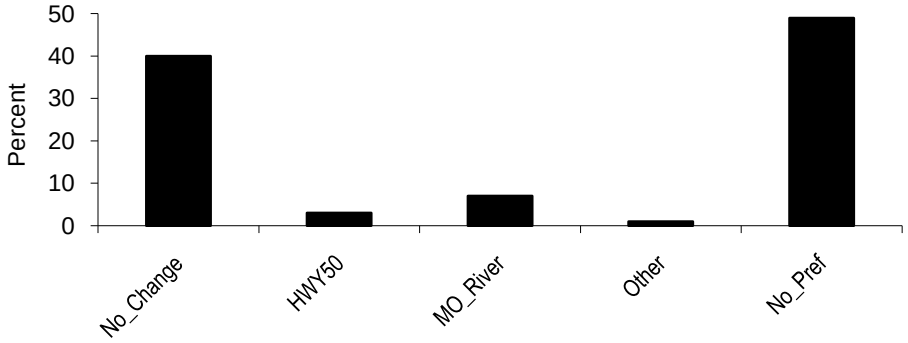


SQUAW CREEK: Hunters in the Squaw Creek region have indicated slightly later season date preferences during the past five years compared to the previous eight years of 60-day seasons. Compared to other regions, hunters in this region expressed more agreement about their most preferred week to hunt with 41% indicating they most preferred to hunt during the third and fourth weeks of November. Nearly 90% of respondents either had no opinion or preferred the current North Zone boundary in western Missouri. Although only 6% indicated they were dissatisfied with zone boundaries, 23% expressed dissatisfaction with season dates.

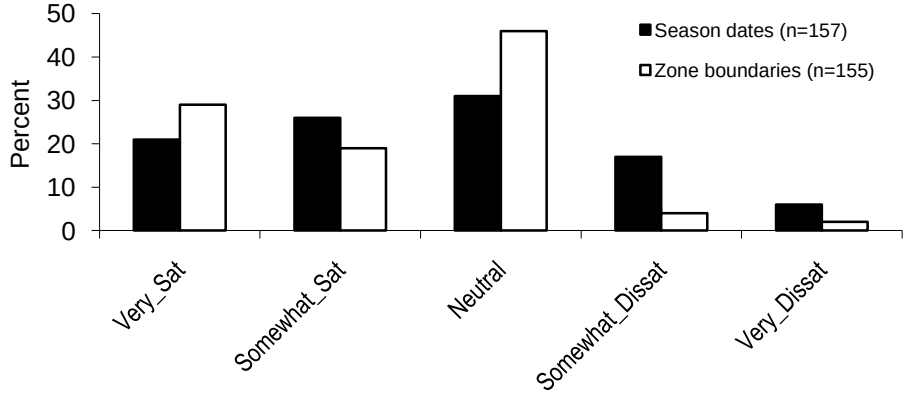
Week most preferred to hunt ducks for hunters who primarily hunted the Squaw Creek Region: 1997-2004 and 2005-2009.



North Zone boundary preferences for western Missouri among those who primarily hunted the Squaw Creek Region (n=177).

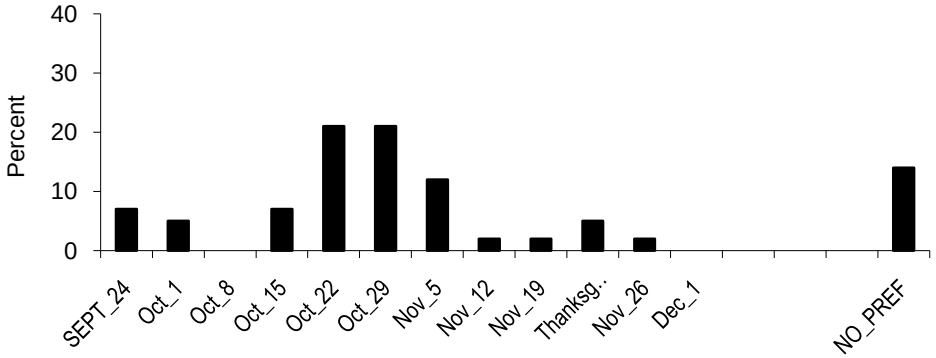


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Squaw Creek Region.

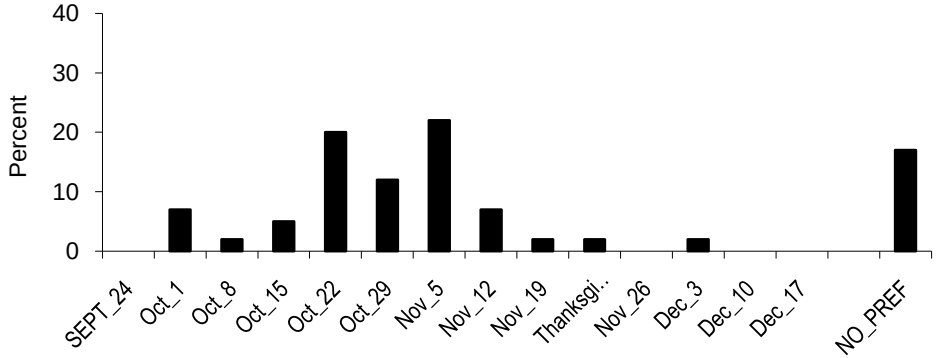


NORTH MISSOURI: Small streams and rivers, associated floodplain wetlands (oxbow depressions), and farm ponds account for much of the North Missouri wetland habitat. This region has relatively few duck hunters. Those responding to this survey had equal preference (21%) for the current opening day of October 29 or the season opening a week earlier on October 22. An opening day of November 5 was slightly favored (22%) over an opening day of October 22 (20%) in the event of a 45-day season. There was no clear agreement for an opening date in the event of a 30-day season although October 29 was slightly more preferred (18%) than an opening day of November 12 (15%).

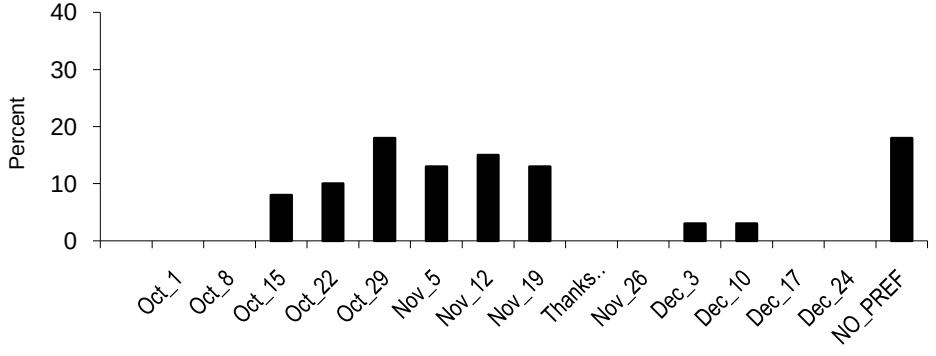
Preferred day for 60-day season to open for those who primarily hunted the North Missouri Region (n=42).



Preferred day for 45-day season to open for those who primarily hunted the North Missouri Region (n=41).

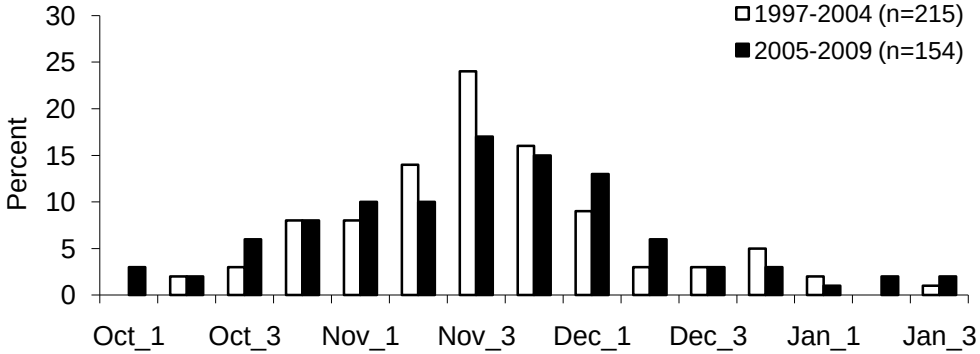


Preferred day for 30-day season to open for those who primarily hunted the North Missouri Region (n=39).

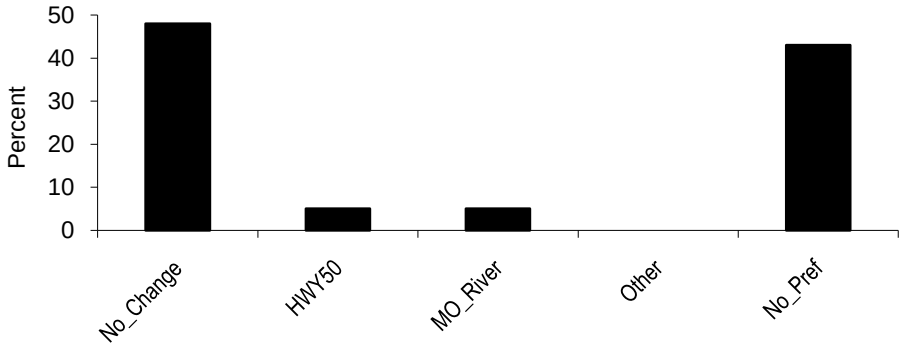


NORTH MISSOURI: Similar to season date preferences, the week most preferred by hunters in north Missouri is earlier than in most regions. Over 70% of 2005-2009 respondents preferred to hunt in either October or November, with the third week in November being the most popular. More than 90% of respondents either had no opinion or preferred the current north zone boundary in western Missouri. However, 38% of respondents were dissatisfied with season dates in this region.

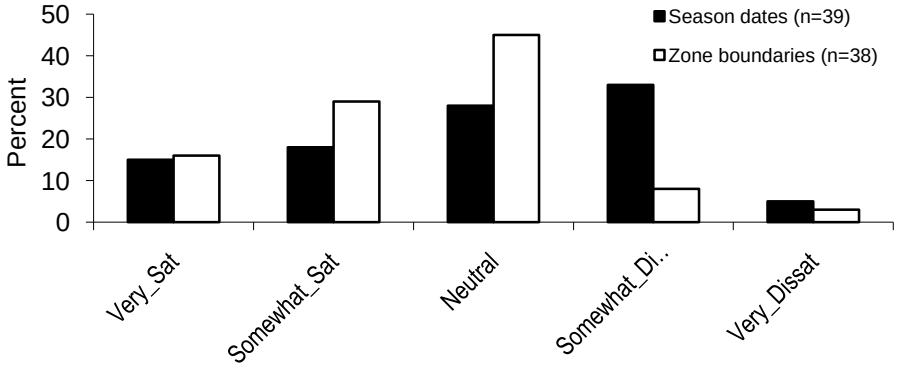
Week most preferred to hunt ducks for hunters who primarily hunted the North Missouri Region: 1997-2004 and 2005-2009.



North Zone boundary preferences for western Missouri among those who primarily hunted the North Missouri Region (n=44).

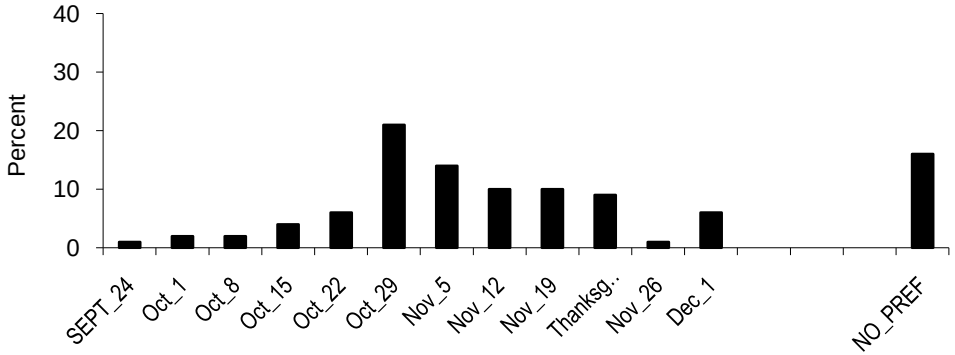


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the North Missouri Region.

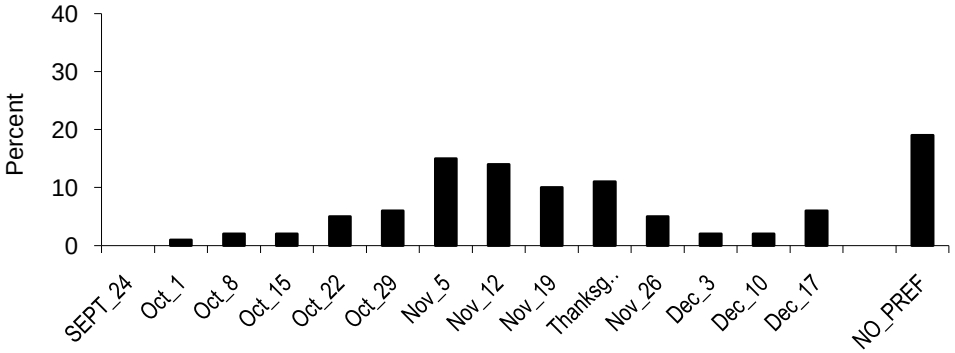


MISSOURI RIVER NORTH: With the combination of shallow water habitat, along with deep water habitat found in association with the Missouri River and Smithville Reservoir, hunters were more divided about season date preferences than hunters in the Northwest and generally had later season date preferences. Only 21% indicated support for the current timing of the North Zone opener around October 29, while 50% preferred a later season opener and 15% an earlier opener. An additional analysis that compiled the average season date preferences of hunters across the Missouri River North region found that on average hunters in this region preferred a 60-day season to open on November 5, compared to the current opening date around October 29. Hunters were in much less agreement about season dates in the event of 45- or 30-day seasons. Hunters were nearly equally divided about when a 30-day season should open with the most preferred dates ranging from November 5 through November 26.

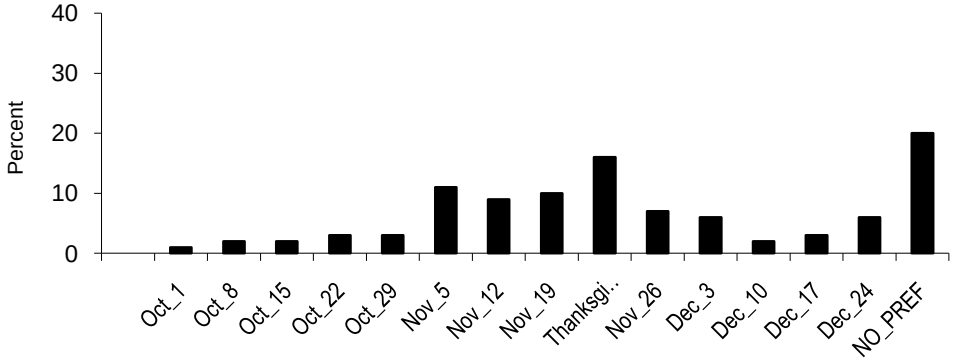
Preferred day for 60-day season to open for those who primarily hunted the Missouri River North Region (n=125).



Preferred day for 45-day season to open for those who primarily hunted the Missouri River North Region (n=121).

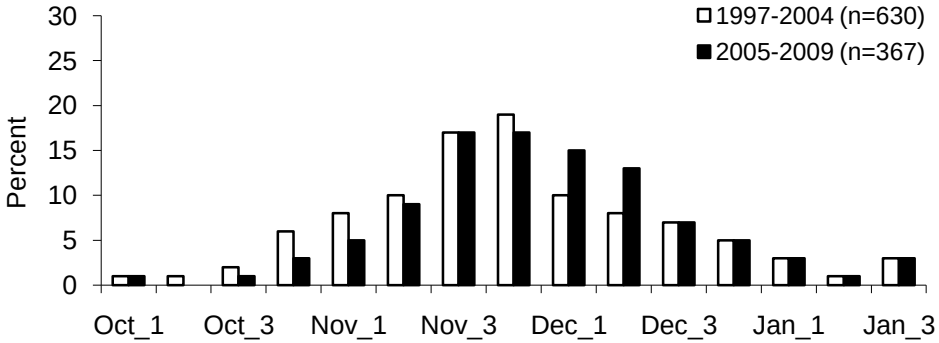


Preferred day for 30-day season to open for those who primarily hunted the Missouri River North Region (n=120).

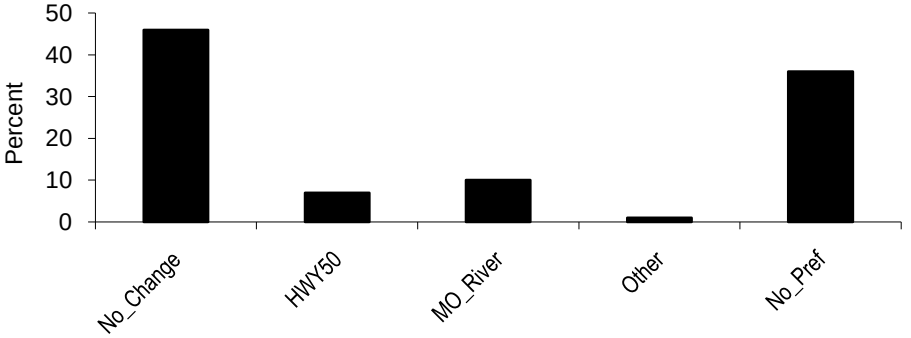


MISSOURI RIVER NORTH: In recent years, more hunters in this region have expressed a preference for later season dates. The number of hunters who indicated their most preferred week was either in December or January rose from 37% for 1997-2004 respondents to 47% for 2005-2009 respondents. However, the third and fourth weeks of November still were the most popular weeks to hunt ducks in this region with 17% preferring the third week of November and 17% the fourth week of November. Thirty-one percent of hunters in the region expressed dissatisfaction with season dates with 50% of hunters in the region preferring a later 60-day season. Although 50% of hunters in this region preferred a later 60-day season, and 31% expressed dissatisfaction with zone boundaries, only 17% suggested an alternative zone boundary.

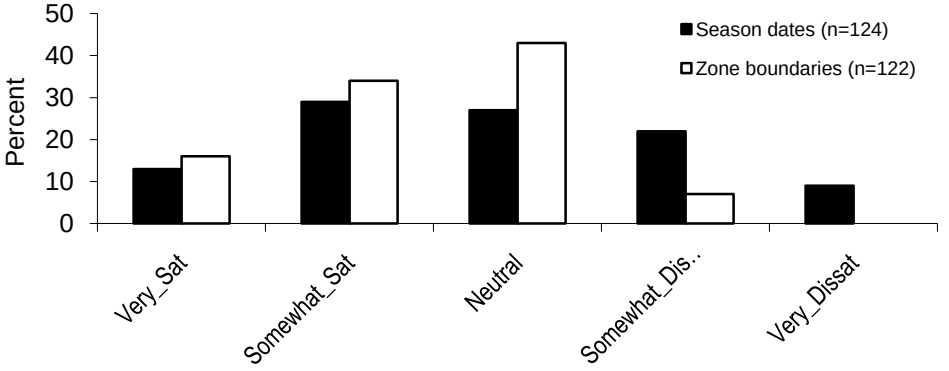
Week most preferred to hunt ducks for hunters who primarily hunted the Missouri River North Region: 1997-2004 and 2005-2009.



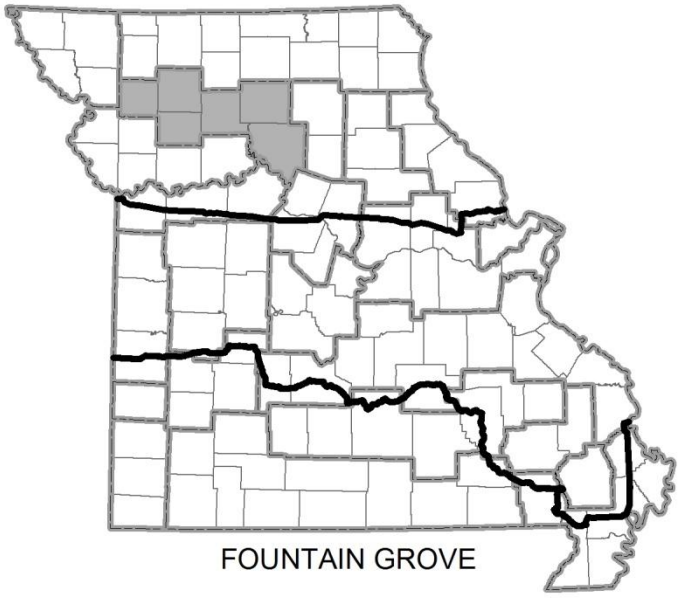
North Zone boundary preferences for western Missouri among those who primarily hunted the Missouri River North Region (n=136).



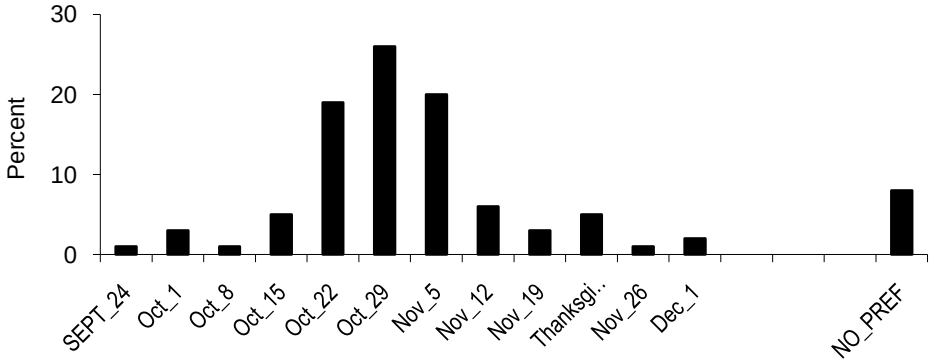
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Missouri River North Region.



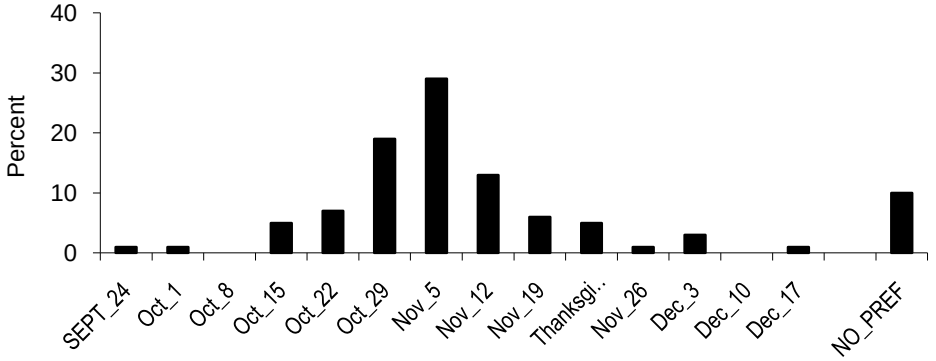
FOUNTAIN GROVE: Most hunting in this region is done over shallow water. Hunter season date preferences in this region were similar to other regions in north Missouri. In a 60-day season, the current opening date around October 29 was the most popular with 26% selecting this option although 19% would like it to open a week earlier and 20% a week later. Hunters were in more agreement that the season should open on November 5 during a 45-day season (24%) and November 12 during a 30-day season (29%).



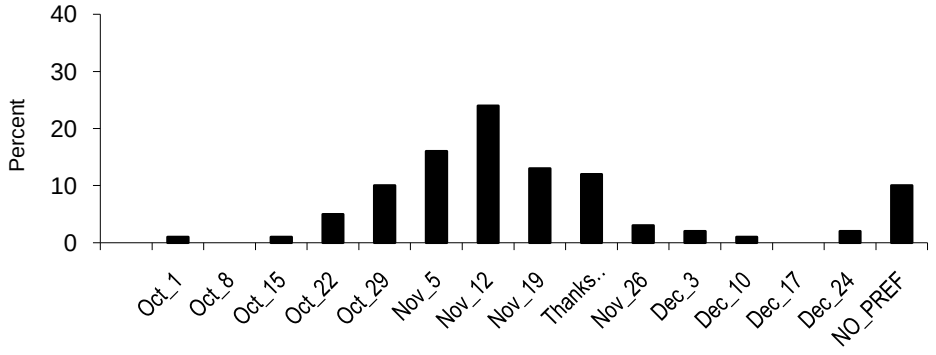
Preferred day for 60-day season to open for those who primarily hunted the Fountain Grove Region (n=153).



Preferred day for 45-day season to open for those who primarily hunted the Fountain Grove Region (n=150).

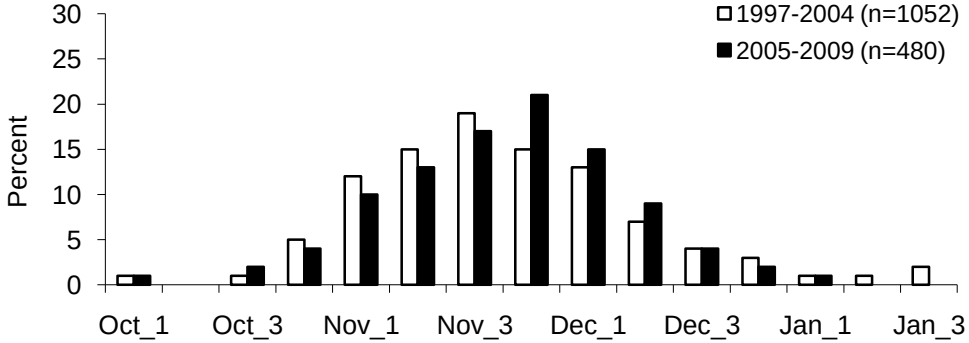


Preferred day for 30-day season to open for those who primarily hunted the Fountain Grove Region (n=148).

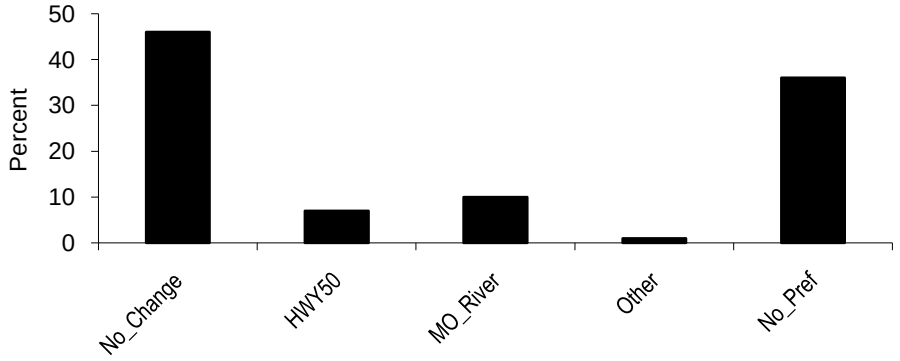


FOUNTAIN GROVE: As in many regions of the state, hunter preferences in the Fountain Grove Region have gradually shifted towards later dates. However, there is general agreement among hunters with 53% indicating their most preferred week occurs from the third week of November through the first week in December. Twenty-three percent of hunters in this region expressed dissatisfaction with season dates and 16% provided alternative zone boundary locations.

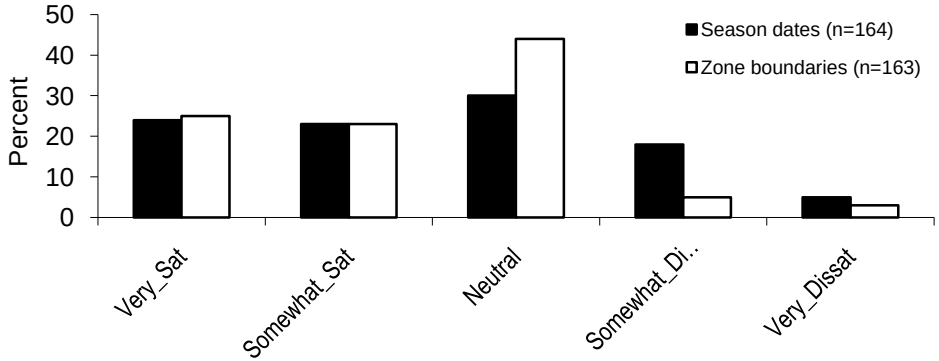
Week most preferred to hunt ducks for hunters who primarily hunted the Fountain Grove Region: 1997-2004 and 2005-2009.



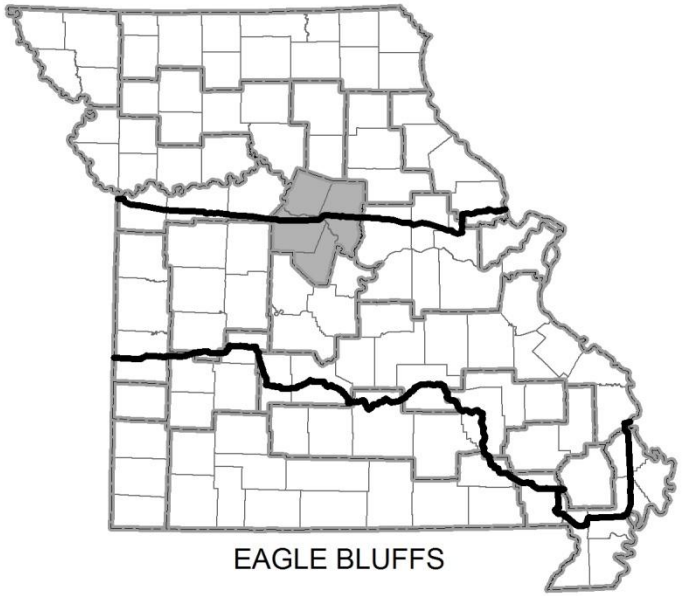
North Zone boundary preferences for western Missouri among those who primarily hunted the Fountain Grove Region (n=136).



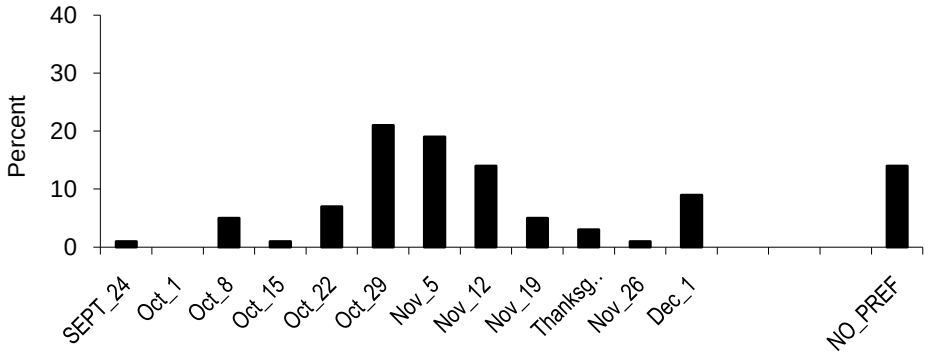
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Fountain Grove Region.



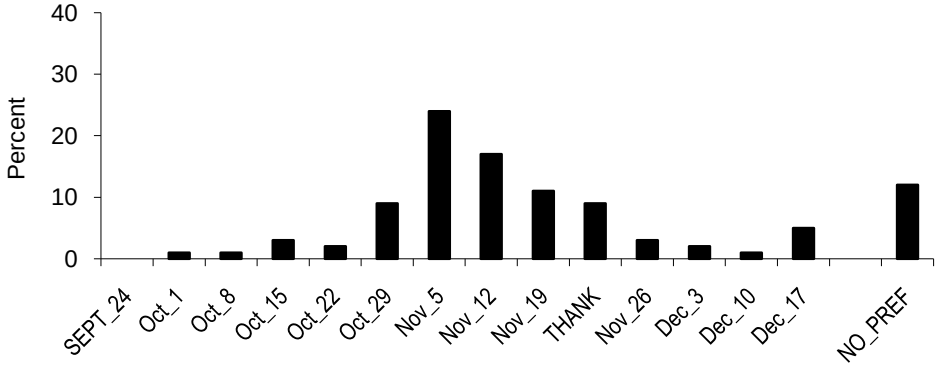
EAGLE BLUFFS: Hunters in the Eagle Bluffs Region have the opportunity to hunt either shallow water habitat such as Eagle Bluffs CA or deep water habitat on the Missouri River. Prior to 2006, much of this region was in the North Zone. After five years experience with the new zone boundary, preferences for timing of a 60-day season reflect that the zone boundary splits this region as 21% preferred the current North Zone 60-day season opener of October 29, 19% preferred the current Middle Zone 60-day season opener of November 5, and 14% preferred a later 60-day season opener of November 12. In the event of a 45-day season, hunters were more in agreement, with 24% preferring the season to extend from November 5 through December 19. When considering 30-day season options, preferences were once again more divided with similar numbers of hunters wanting it to open on any given weekend in November.



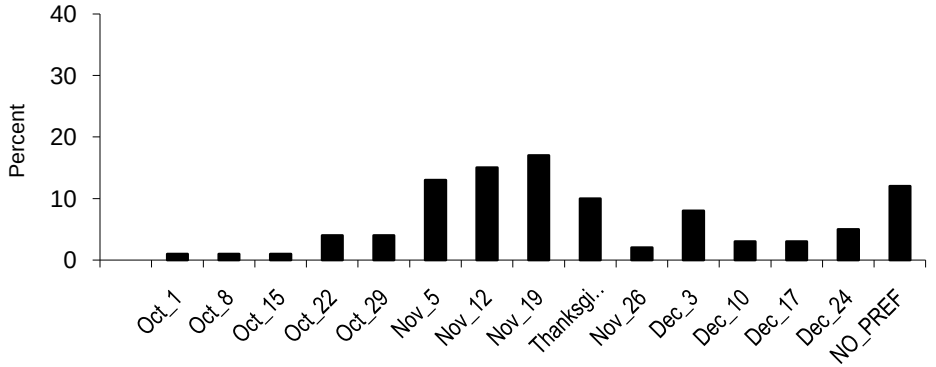
Preferred day for 60-day season to open for those who primarily hunted the Eagle Bluffs Region (n=96).



Preferred day for 45-day season to open for those who primarily hunted the Eagle Bluffs Region (n=94).

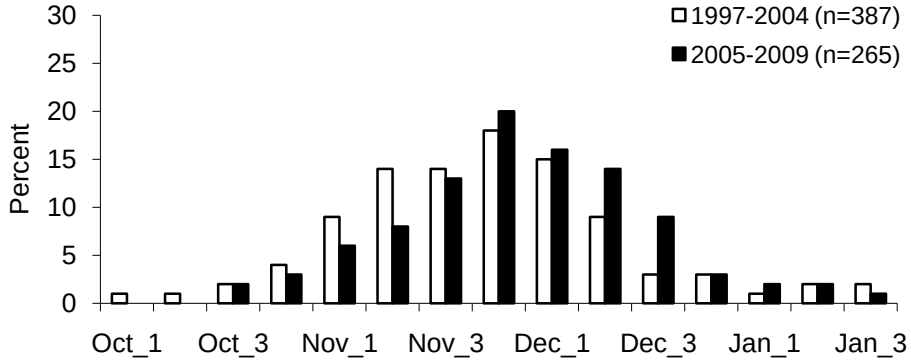


Preferred day for 30-day season to open for those who primarily hunted the Eagle Bluffs Region (n=93).

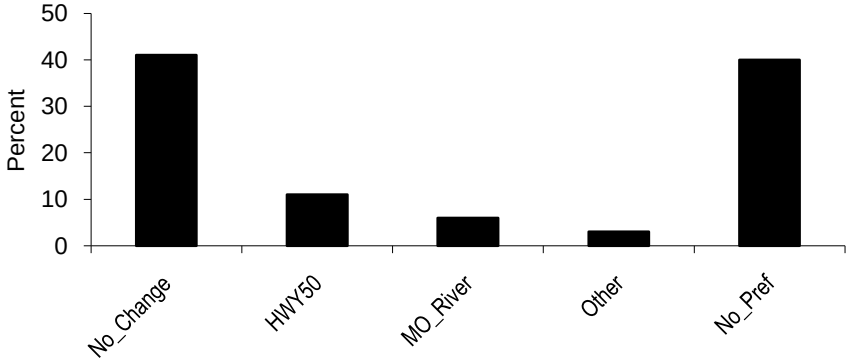


EAGLE BLUFFS: Those hunting shallow water locations were likely among the 52% of 2005-2009 respondents who indicated their preferred week to hunt was in October or November. Those hunting the Missouri River were likely among the 47% with December and January preferences. Only 13% expressed dissatisfaction with the zone boundaries and 14% with season dates.

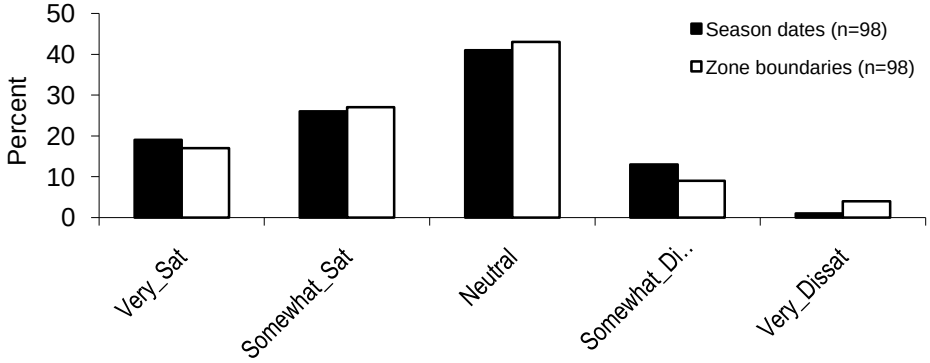
Week most preferred to hunt ducks for hunters who primarily hunted the Eagle Bluffs Region: 1997-2004 and 2005-2009.



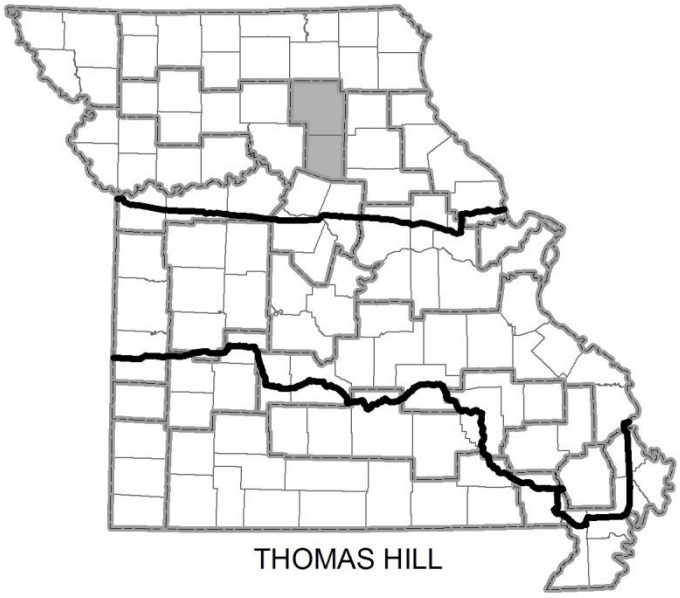
North Zone boundary preferences for western Missouri among those who primarily hunted the Eagle Bluffs Region (n=103).



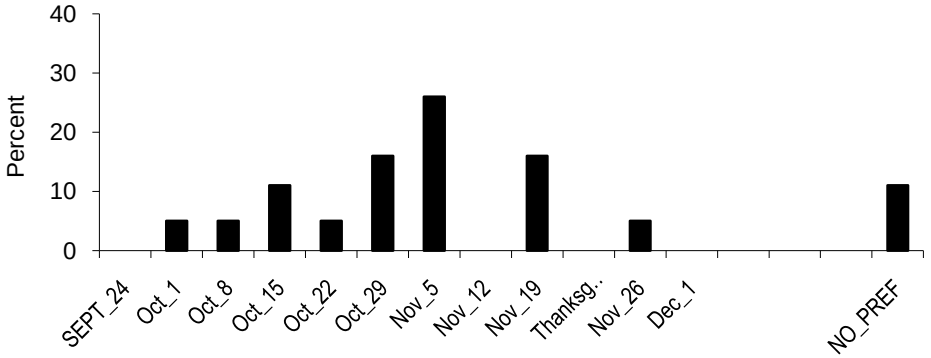
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Eagle Bluffs Region.



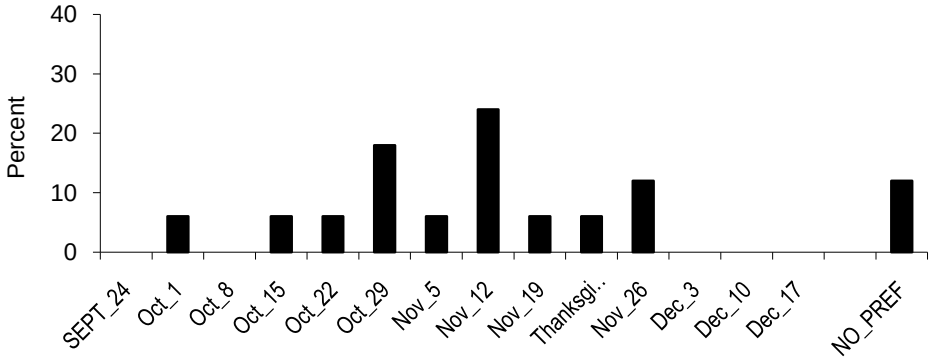
THOMAS HILL: Reservoirs and the Chariton River floodplain provide the primary wetlands in this region. The varied habitats, ranging from shallow remnant depressions in the Chariton River floodplain to deep, open water associated with warm-water discharge from power generation on Thomas Hill, account for diverse views about hunting seasons. Based on a very limited sample size, 16% of hunters in this region preferred the current opening date of October 29, 47% would like a later opener, and 21% an earlier opener. A November 12 opener and November 19 opener were the most popular among hunters for 45-day and 30-day seasons, respectively.



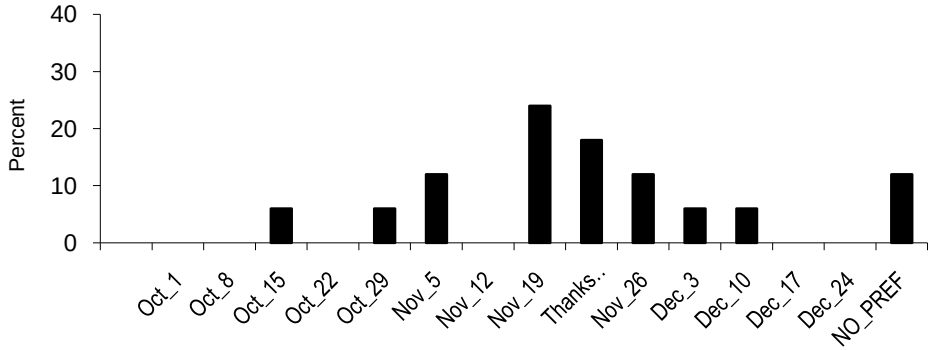
Preferred day for 60-day season to open for those who primarily hunted the Thomas Hill Region (n= 19).



Preferred day for 45-day season to open for those who primarily hunted the Thomas Hill Region (n= 17).

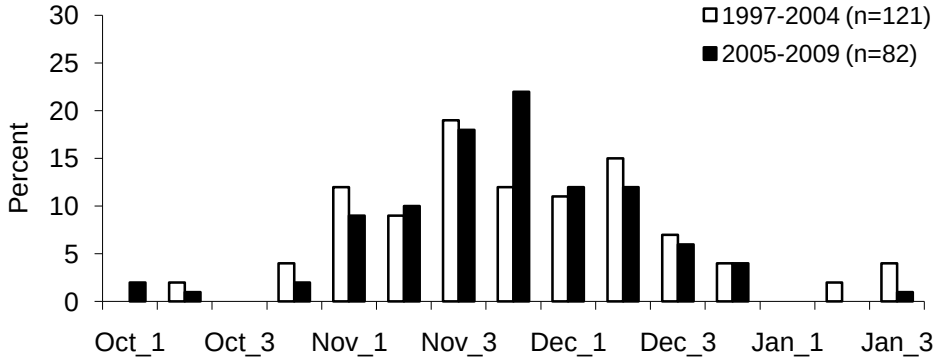


Preferred day for 30-day season to open for those who primarily hunted the Thomas Hill Region (n= 17).

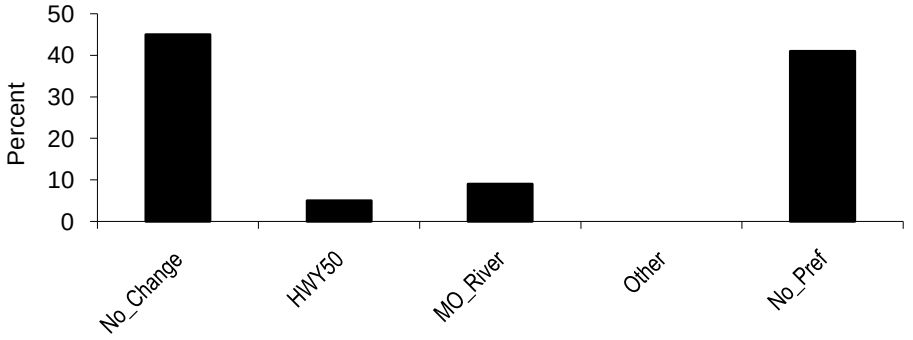


THOMAS HILL: While season dates were variable among hunters in the Thomas Hill region, they expressed more agreement about the week they most preferred to hunt with 40% indicating they most preferred to hunt during the third and fourth week of November. Ten percent of respondents from this region were dissatisfied with zone boundaries and 15% with season dates.

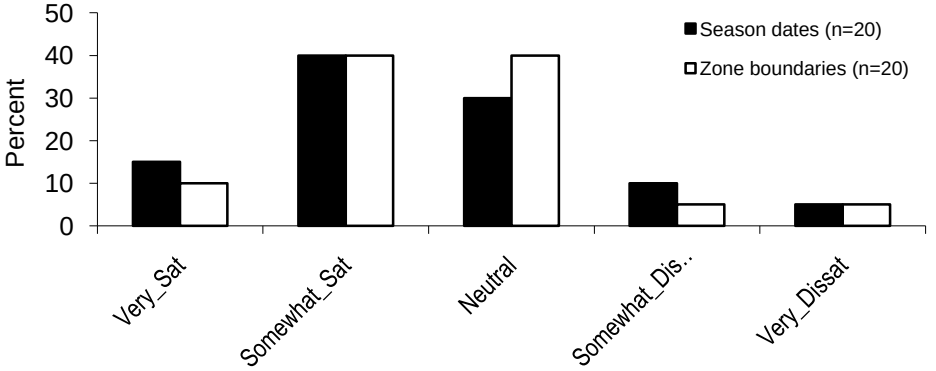
Week most preferred to hunt ducks for hunters who primarily hunted the Thomas Hill Region: 1997-2004 and 2005-2009.



North Zone boundary preferences for western Missouri among those who primarily hunted the Thomas Hill Region (n=22).

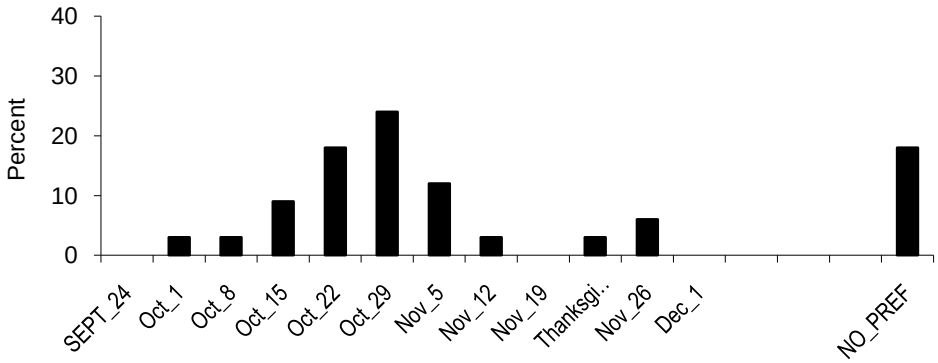


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Thomas Hill Region.

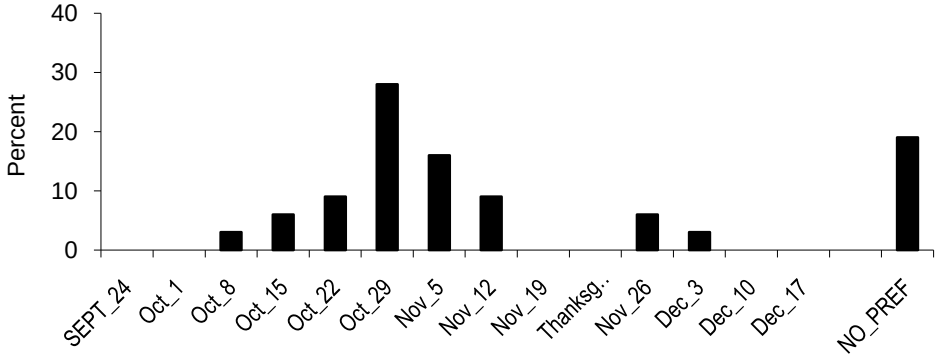


MARK TWAIN: Mark Twain Reservoir and irrigation lakes provide the most hunting opportunity in this region. Based on a very limited sample size, 24% of hunters preferred the current North Zone opener around October 29, 33% preferred an earlier opener, and 24% preferred a later opener for a 60-day season. The majority of respondents did not want the season to open any later in a 45-day season and in a 30-day season; October 29 and November 5 were the most popular selections, respectively.

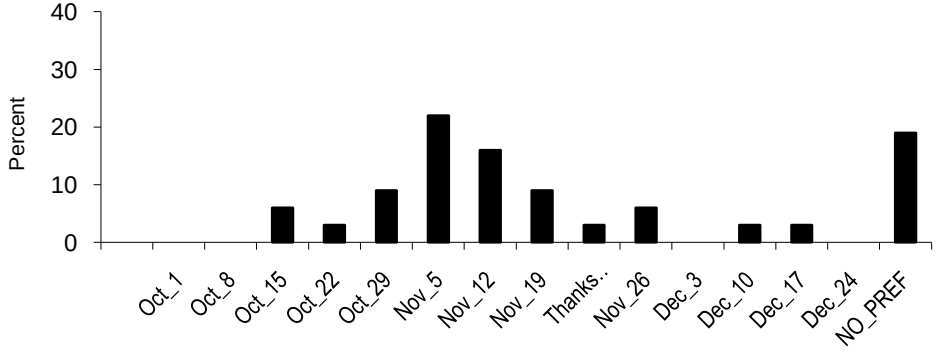
Preferred day for 60-day season to open for those who primarily hunted the Mark Twain Region (n= 33).



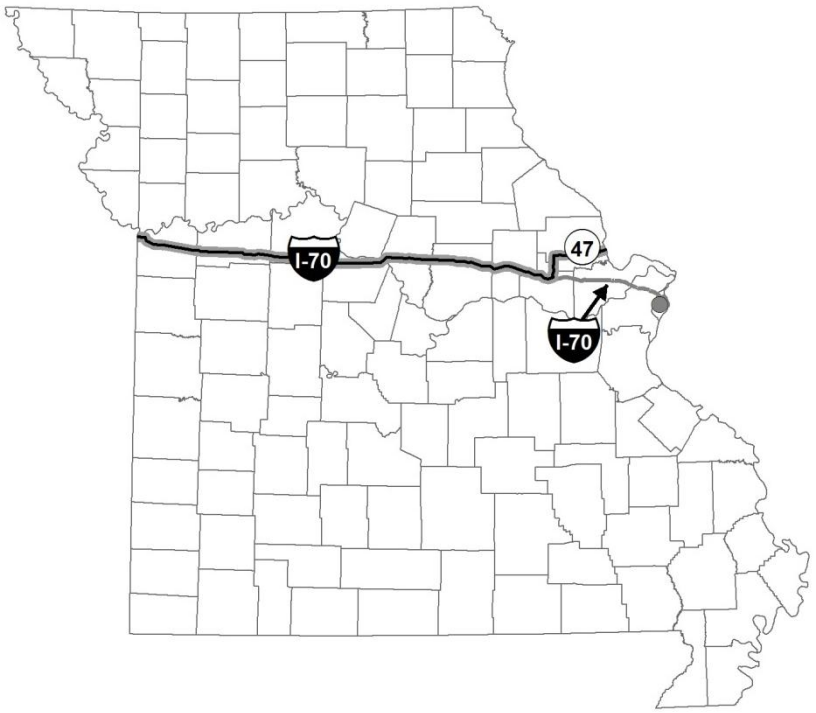
Preferred day for 45-day season to open for those who primarily hunted the Mark Twain Region (n= 32).



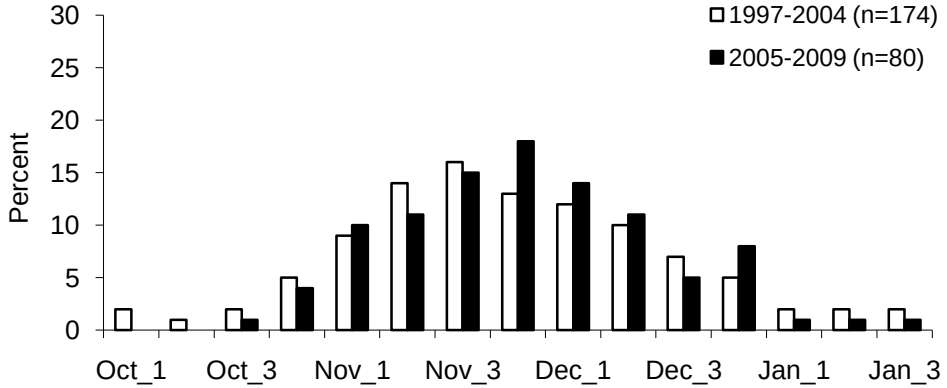
Preferred day for 30-day season to open for those who primarily hunted the Mark Twain Region (n= 32).



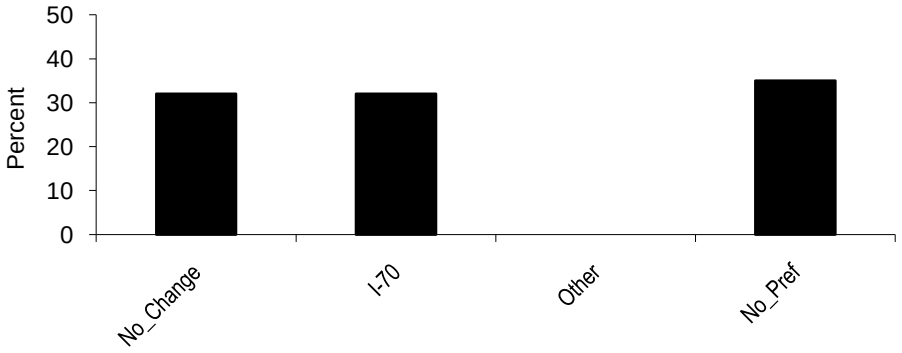
MARK TWAIN: Similar to many regions in northern Missouri, the fourth week in November was most frequently selected as the week respondents most preferred to hunt. Eighteen percent selected the fourth week in November as their most preferred week to hunt and 41% selected either the third or fourth week in November or the first week in December. Twenty-five percent of Mark Twain hunters were dissatisfied with season dates and 15% with zone boundaries. Although it would have little impact on hunting in this region, 32% indicated they would like the North Zone in eastern Missouri revert back to I-70.



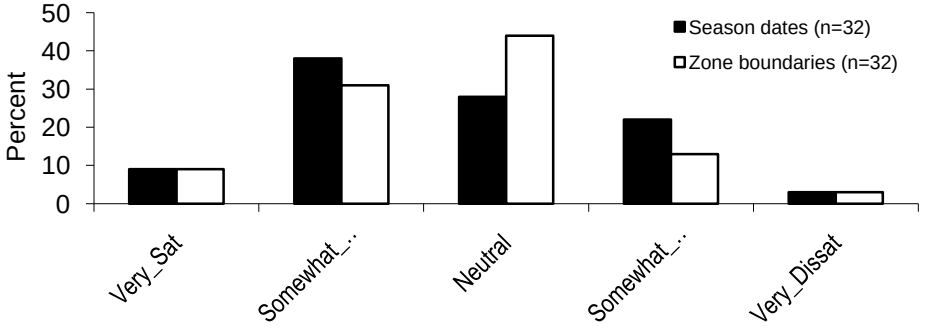
Week most preferred to hunt ducks for hunters who primarily hunted the Mark Twain Region: 1997-2004 and 2005-2009.



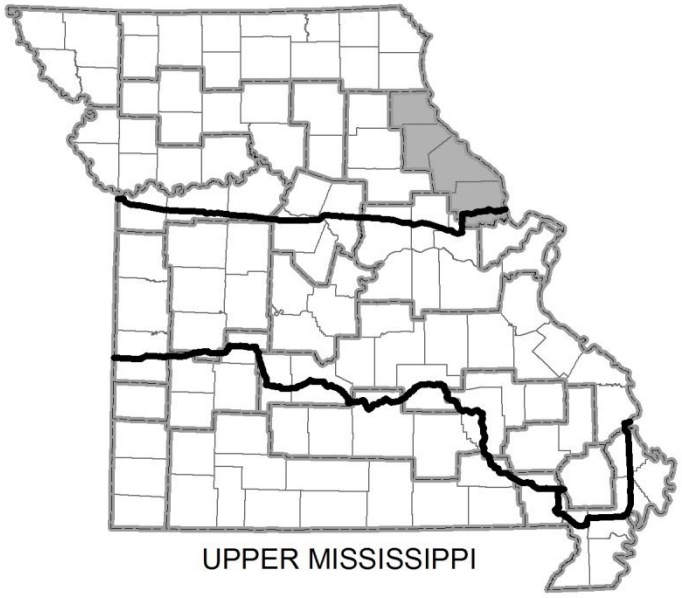
North Zone boundary preferences for eastern Missouri among those who primarily hunted the Mark Twain Region (n=34).



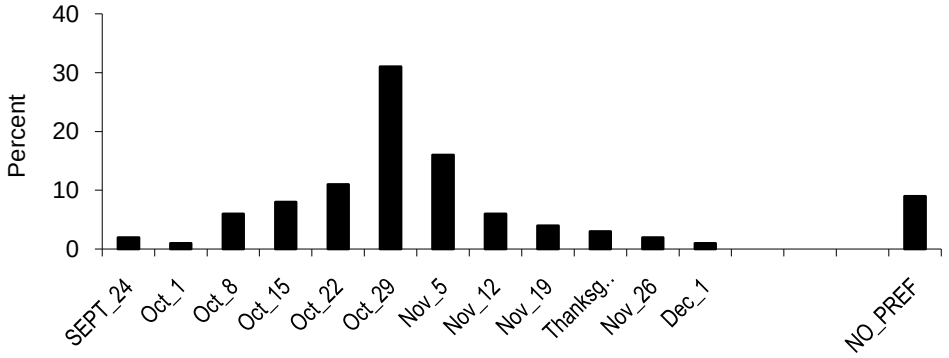
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Mark Twain Region.



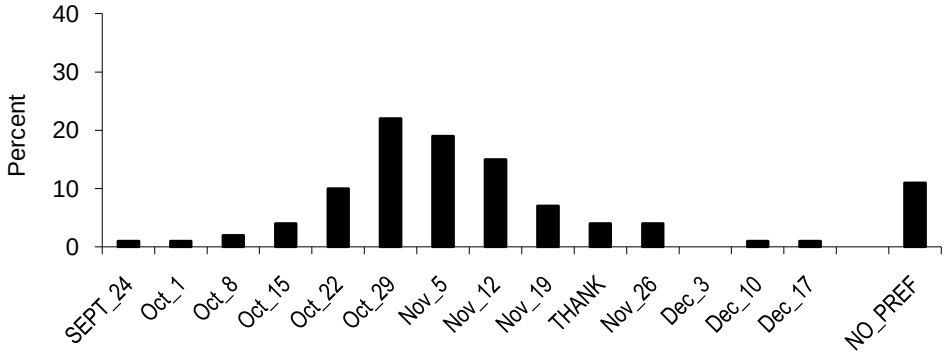
UPPER MISSISSIPPI: The "Upper Miss" is one of the most traditional migration corridors and hunting locations in Missouri and the Midwest. Habitats range from open river to backwater sloughs to managed shallow wetlands. Hunters in this region expressed significant agreement about 60-day season dates compared to all other regions with 32% preferring the current opening date around October 29. The remaining respondents with an opinion were evenly divided with 28% desiring an earlier season and 32% preferring a later season. Maintaining an October 29 opener was the most frequently selected option for a 45-day season and hunters expressed little agreement about when a 30-day season should open.



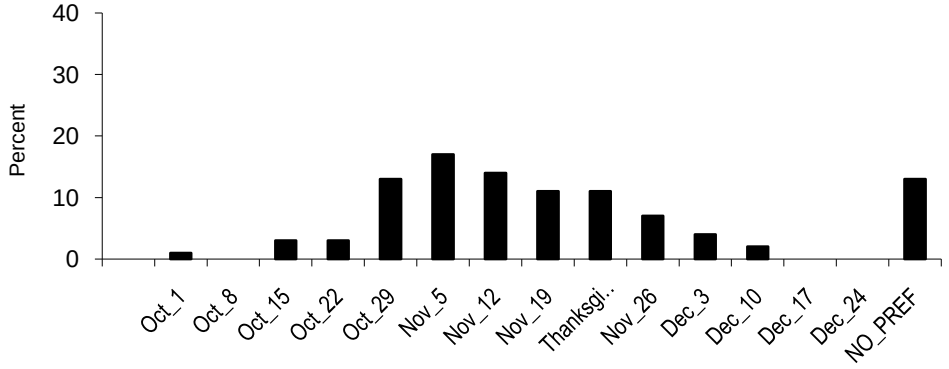
Preferred day for 60-day season to open for those who primarily hunted the Upper Mississippi Region (n=235).



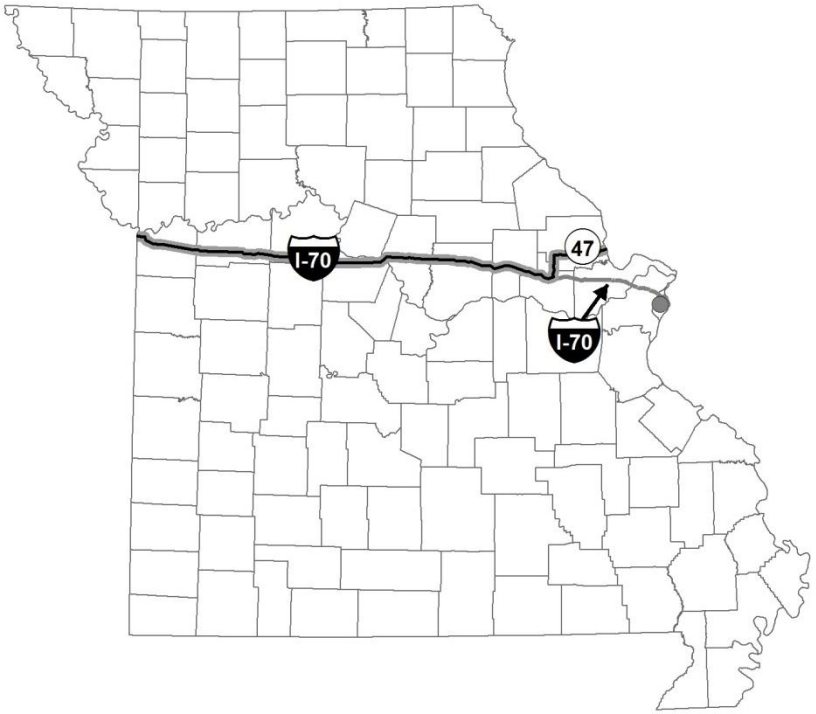
Preferred day for 45-day season to open for those who primarily hunted the Upper Mississippi Region (n=222).



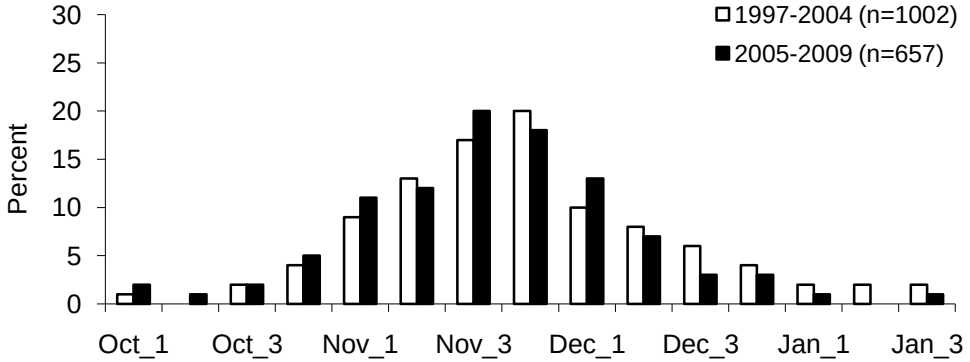
Preferred day for 30-day season to open for those who primarily hunted the Upper Mississippi Region (n=225).



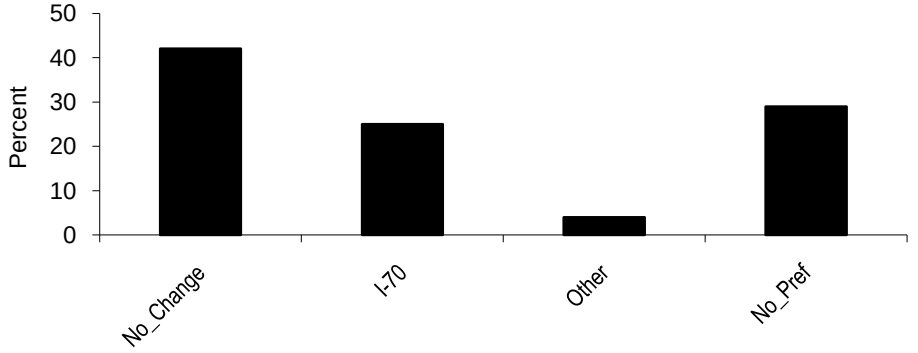
UPPER MISSISSIPPI: The third week of November was the most preferred week to hunt by Upper Mississippi hunters (20%) and 51% preferred either the third or fourth week of November or the first week in December. Twenty-four percent of respondents were dissatisfied with season dates and 9% with zone boundaries.



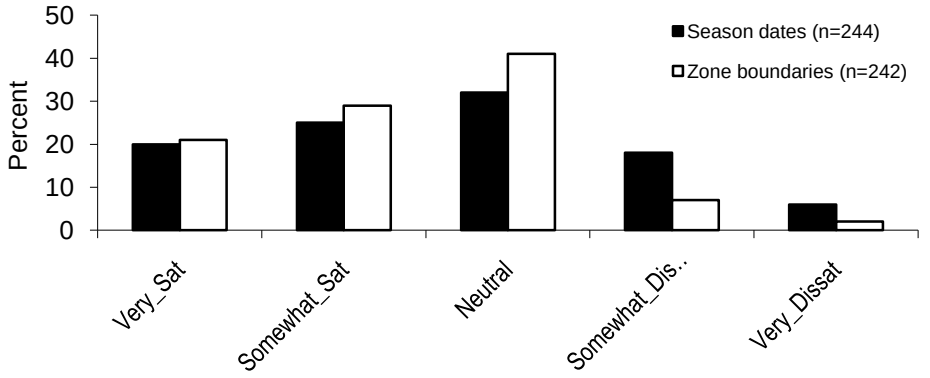
Week most preferred to hunt ducks for hunters who primarily hunted the Upper Mississippi Region: 1997-2004 and 2005-2009.



North Zone boundary preferences for eastern Missouri among those who primarily hunted the Upper Mississippi Region (n=251).

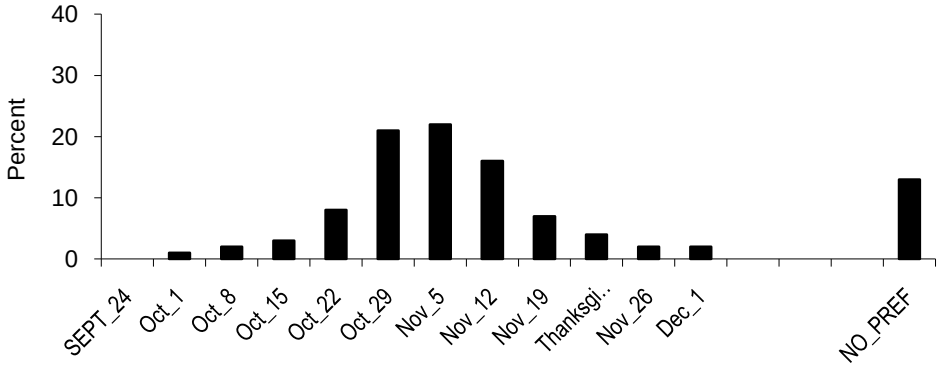


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Upper Mississippi Region.

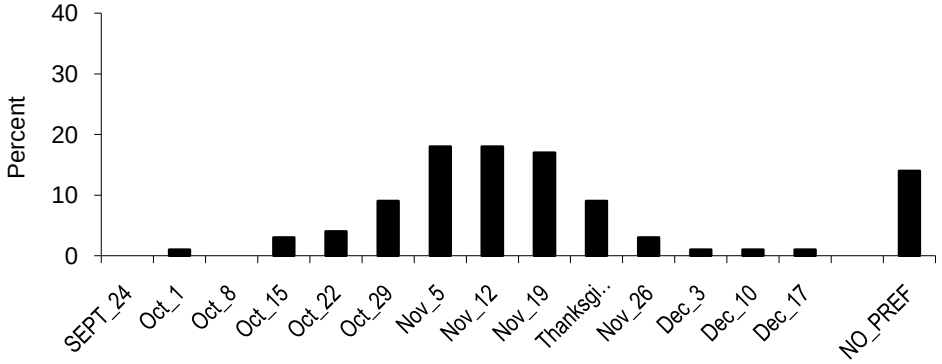


ST. CHARLES COUNTY: At the confluence of the Missouri and Mississippi Rivers, St. Charles County is perhaps the most storied of all duck hunting locations in Missouri. Based on hunter preference information and the results of the 2001 zoning workshop in St. Charles County, the North/Middle Zone boundary was moved north to accommodate hunters' desire for later hunting opportunity. Now, for a 60-day season, a similar number of hunters preferred the current Middle Zone opener around November 5 (22%) or the week before (21%). Thirty-five percent preferred an earlier season and 31% a later season. In the event of a 45-day season, there was virtually equal support for November 5 (18%), November 12 (18%), and November 19 (17%). No one date was clearly supported for a 30-day season.

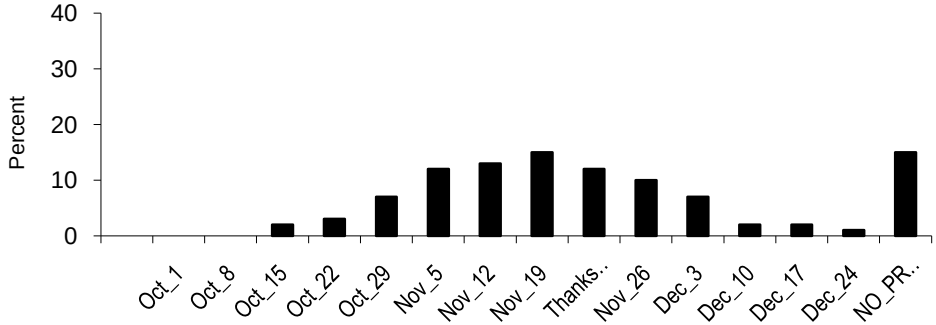
Preferred day for 60-day season to open for those who primarily hunted in St. Charles County (n=260).



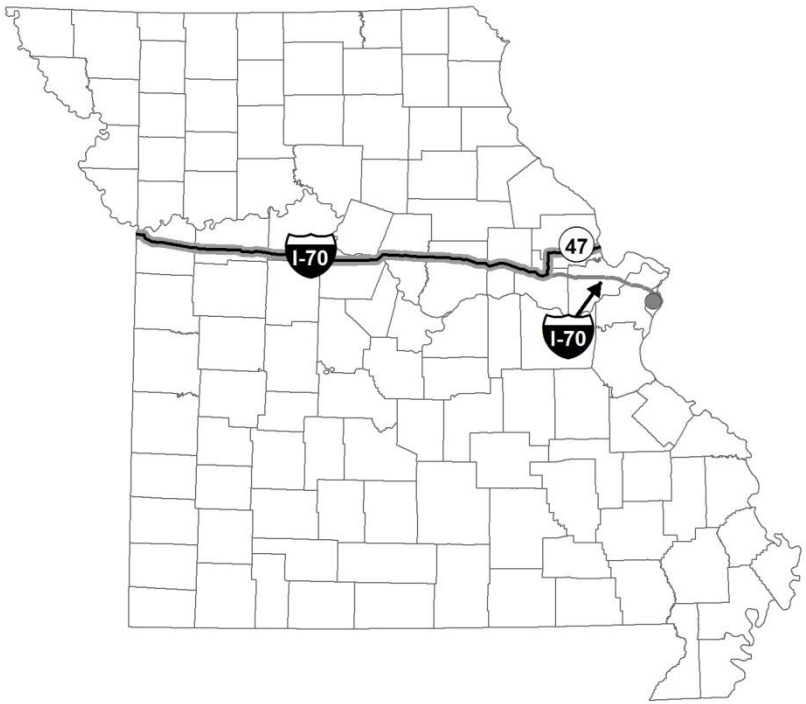
Preferred day for 45-day season to open for those who primarily hunted in St. Charles County (n=243).



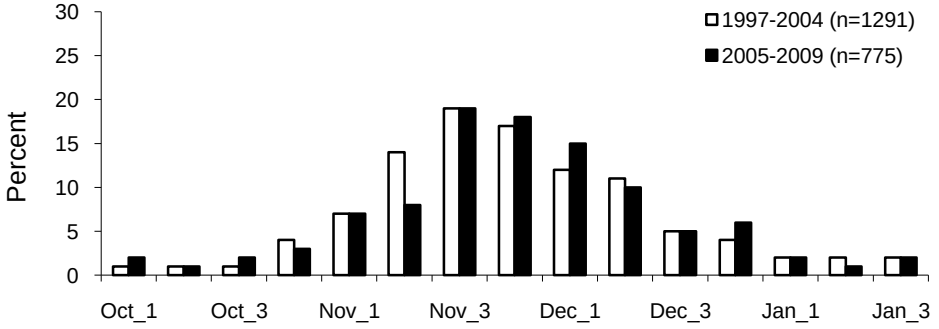
Preferred day for 30-day season to open for those who primarily hunted in St. Charles County (n=244).



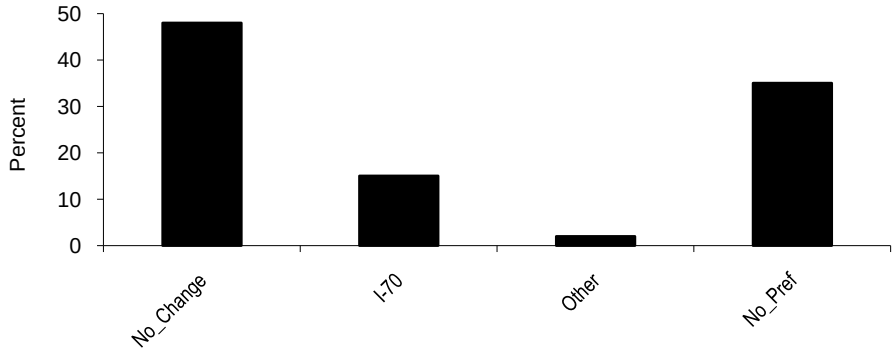
ST. CHARLES COUNTY: The timing of when hunters most preferred to hunt in St. Charles County is similar to hunters in the North Zone. Fifty-two percent indicated their most preferred week to hunt was either the third or fourth week in November or the first week in December. The third week in November was most frequently selected (19%) followed by the fourth week in November (18%). Hunters were generally satisfied or indifferent to zone boundary locations or season dates in this region with 19% indicating dissatisfaction with season dates and 6% with zone boundaries. Only 15% indicated they would like to return the zone boundary back to I-70.



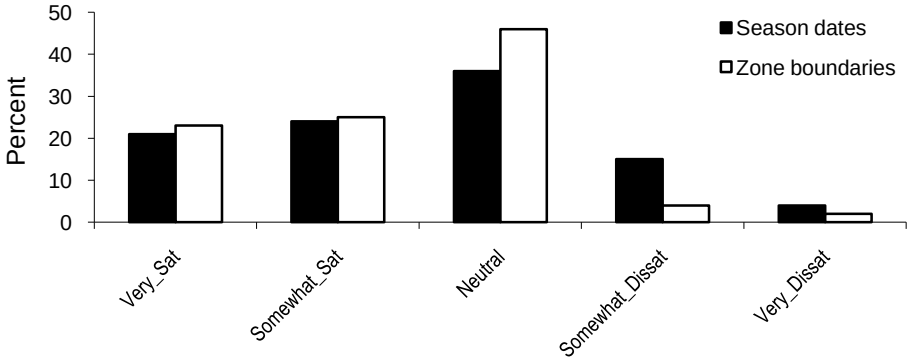
Week most preferred to hunt ducks for hunters who primarily hunted in St. Charles County: 1997-2004 and 2005-2009.



North Zone boundary preferences for eastern Missouri among those who primarily hunted in St. Charles County (n=275).

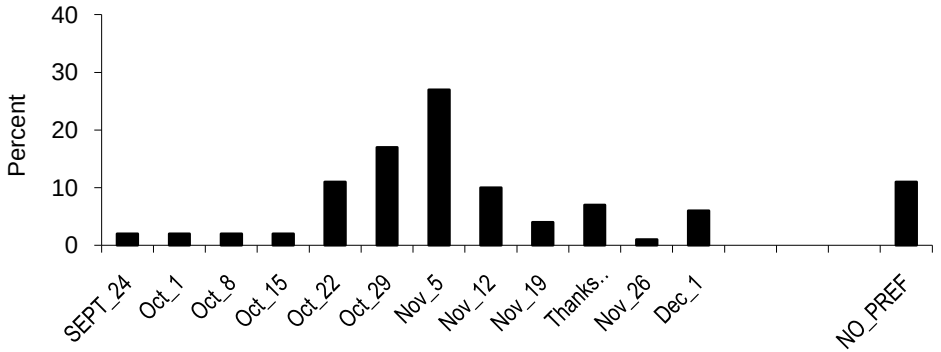


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in St. Charles County.

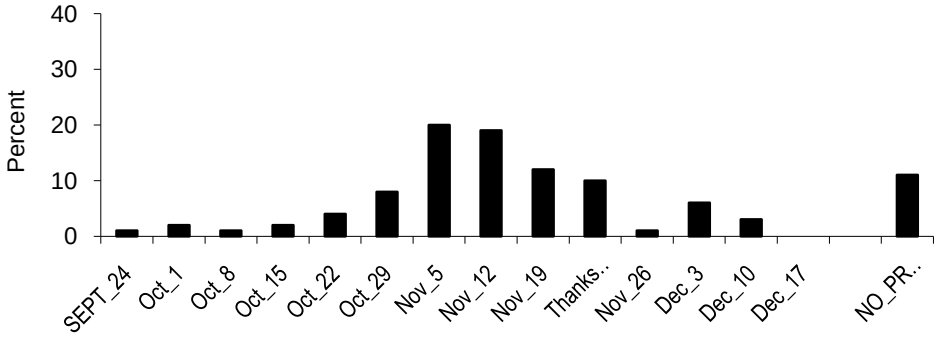


MISSOURI RIVER SOUTH: This Region includes shallow water habitats such as Grand Pass CA and deep water habitat including the Missouri River. Field hunting has also become much more popular in this region. Hunter season date preferences are more similar to those found among hunters in the Middle Zone than North Zone. During a 60-day season, 27% indicated they would like the season to open on November 5, which is the same as the Middle Zone. Only 36% indicated they would like the season to open when it does now or earlier; whereas, 28% indicated they would like a 60-day season to open even later than November 5. November 5 and November 12 were almost equally supported (20% and 19%, respectively) as opening dates in the event of a 45-day season. A season that opens on Thanksgiving Day and closed on December 23 was the most favored (23%) option for a 30-day season.

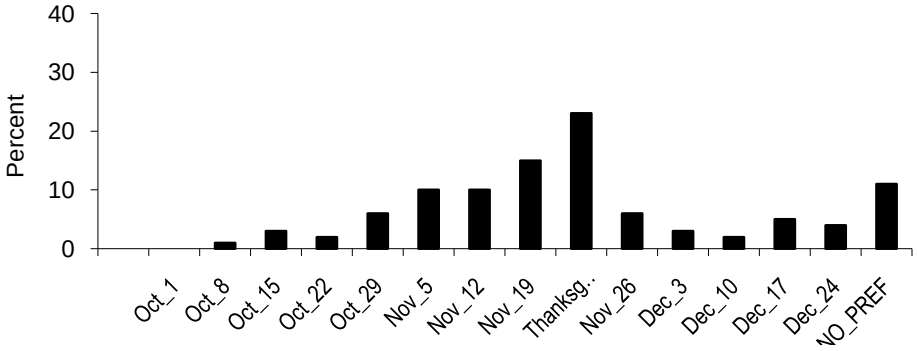
Preferred day for 60-day season to open for those who primarily hunted the Missouri River South Region (n=112).



Preferred day for 45-day season to open for those who primarily hunted the Missouri River South Region (n=105).

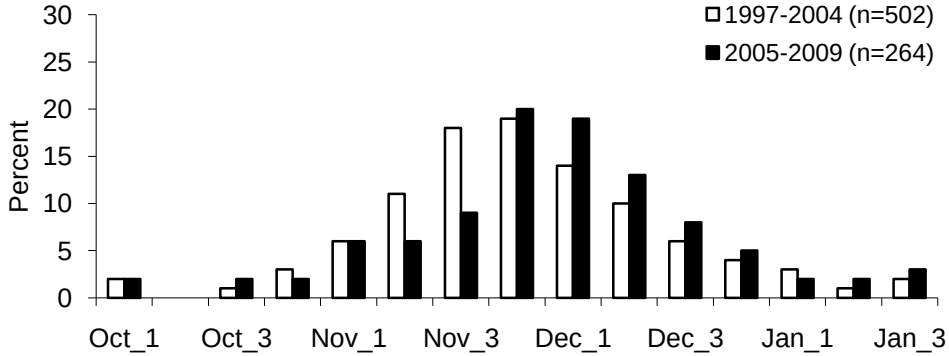


Preferred day for 30-day season to open for those who primarily hunted the Missouri River South Region (n=105).

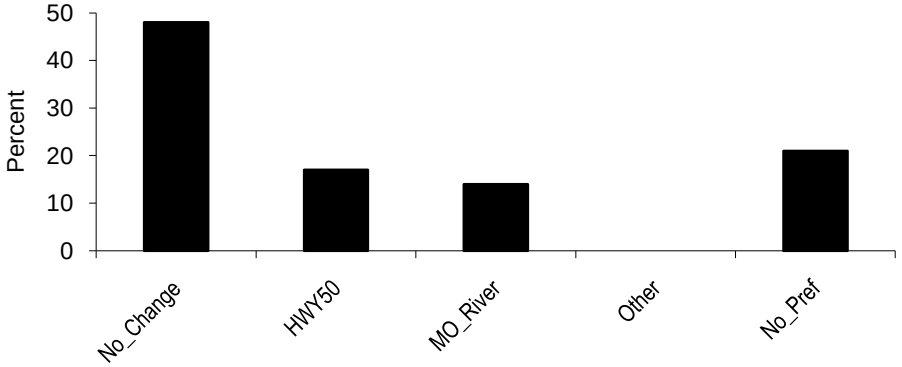


MISSOURI RIVER SOUTH: Hunter opinions regarding the week they most preferred to hunt matches their desire for later seasons. On average, from 1997-2004, 41% of respondents indicated their preferred week to hunt was on or before the third week in November. From 2005-2009, only 18% shared this opinion; whereas, nearly an equal number of hunters preferred the first week of December (19%) as the fourth week in November (20%). Although respondents from this region expressed later season date preferences, this did not result in higher levels of dissatisfaction compared to other regions in the North Zone. Only 23% indicated dissatisfaction with season dates and 13% with zone boundaries. Of those respondents who suggested a zone change, 17% suggested it should be moved further south to HWY 50 and 17% indicated it should be moved north to the Missouri River.

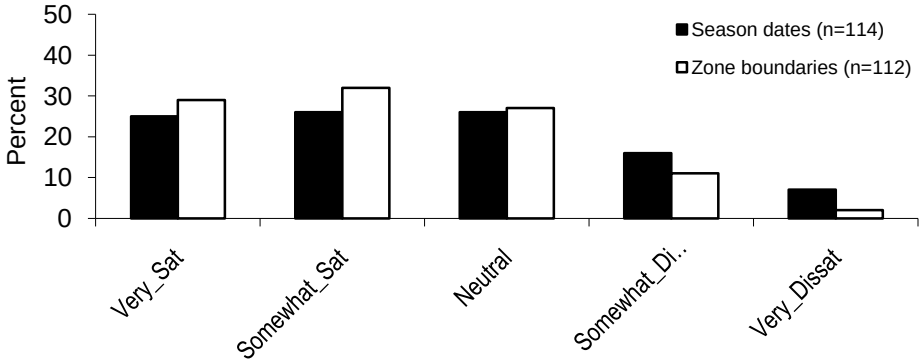
Week most preferred to hunt ducks for hunters who primarily hunted the Missouri River South Region: 1997-2004 and 2005-2009.



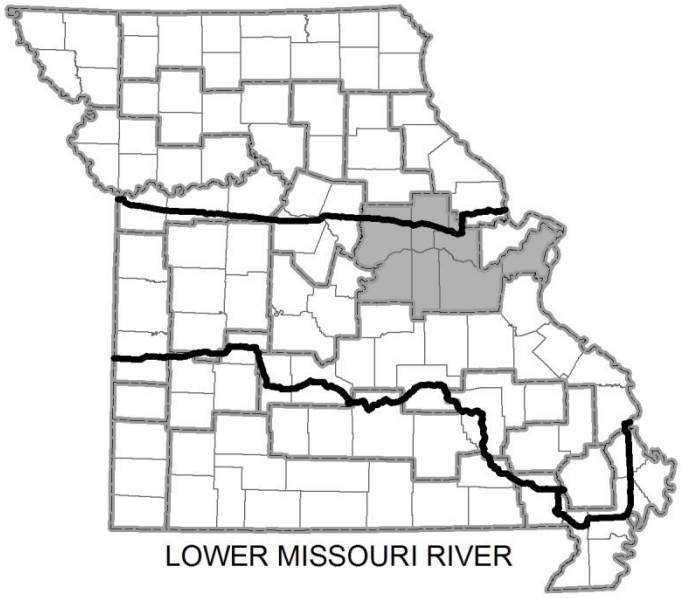
North Zone boundary preferences for western Missouri among those who primarily hunted the Missouri River South Region (n=119).



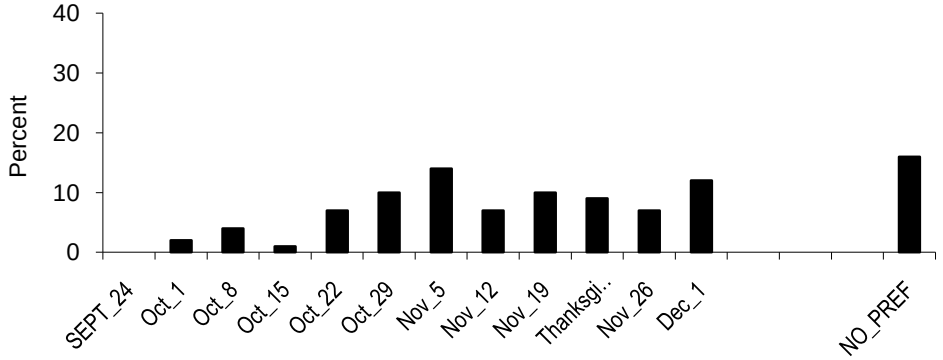
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Missouri River South Region.



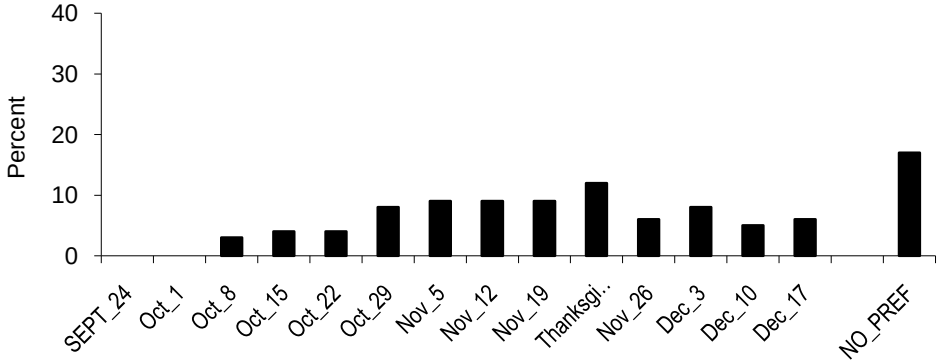
LOWER MISSOURI RIVER: A narrow and altered (levees, wing dams, etc.) Missouri River and floodplain, plus the Osage, Gasconade, and smaller rivers provide only limited wetlands for duck hunting. The region was included in the North Zone until zones were reconfigured in 1991, after which the Lower Missouri River Region was incorporated into the Middle Zone. Season date preferences are extremely varied and likely depend on whether hunters prefer early season wood duck opportunity on streams, late October diving duck migrations, early November mallard arrival, or hunting around freeze-up.



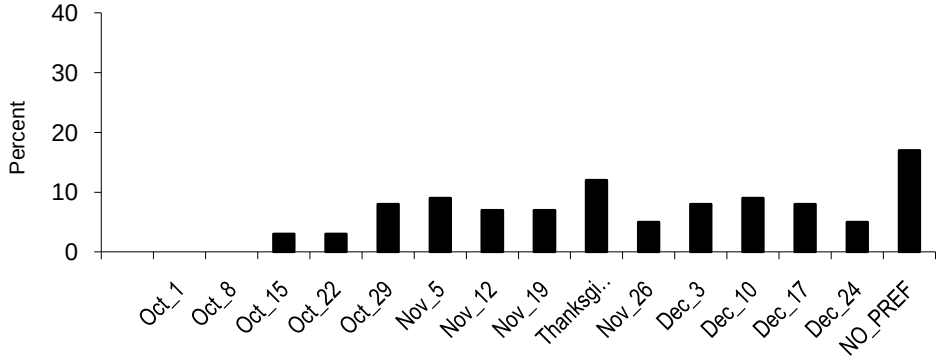
Preferred day for 60-day season to open for those who primarily hunted the Lower Missouri River (n=81).



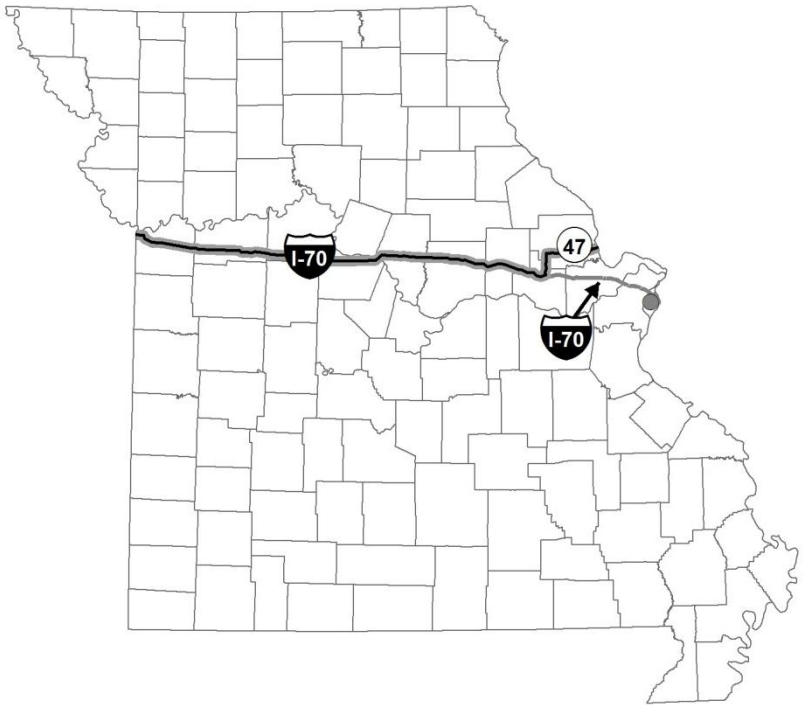
Preferred day for 45-day season to open for those who primarily hunted the Lower Missouri River (n=77).



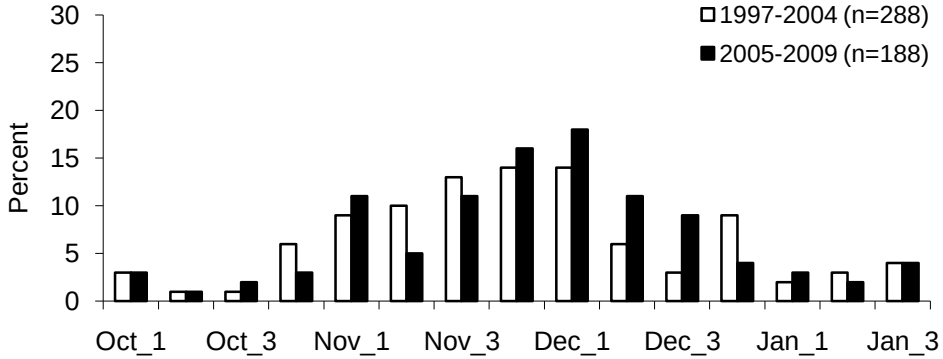
Preferred day for 30-day season to open for those who primarily hunted the Lower Missouri River (n=76).



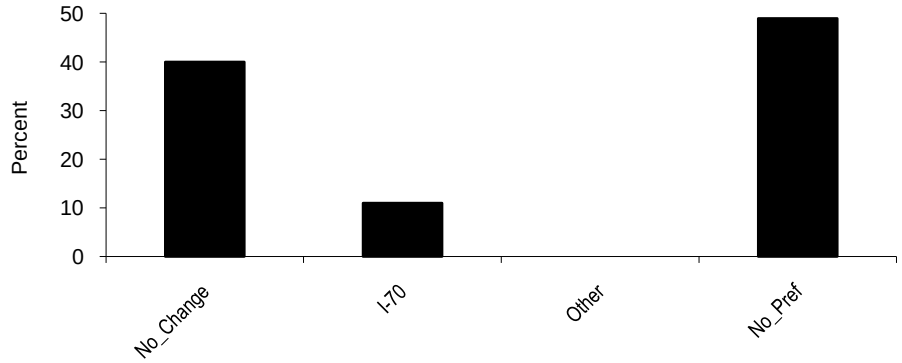
LOWER MISSOURI RIVER: The first week in December was cited as the most preferred week to hunt (18%) by respondents from this region, followed by the fourth week of November (16%), the third week of November (11%) and second week of December (11%). Forty percent of respondents indicated they preferred the current North Zone boundary for eastern Missouri although 11% expressed dissatisfaction with zone boundaries and 31% were dissatisfied with season dates.



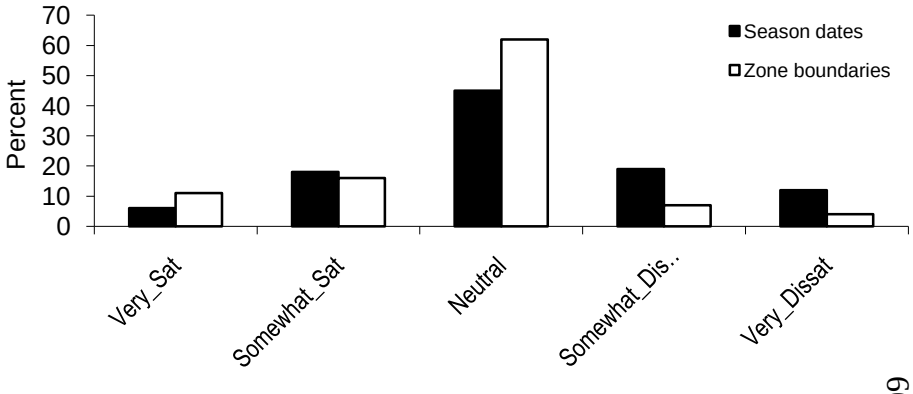
Week most preferred to hunt ducks for hunters who primarily hunted the Lower Missouri River Region: 1997-2004 and 2005-2009.



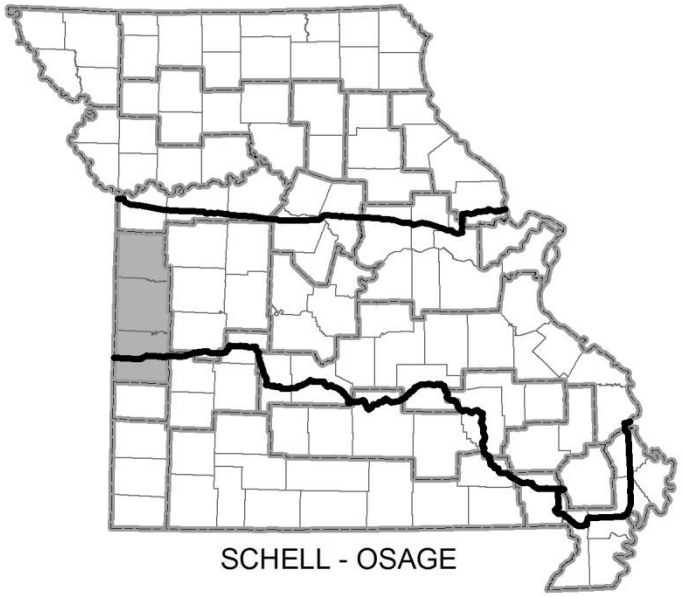
North Zone boundary preferences for eastern Missouri among those who primarily hunted the Lower Missouri River Region (n=95).



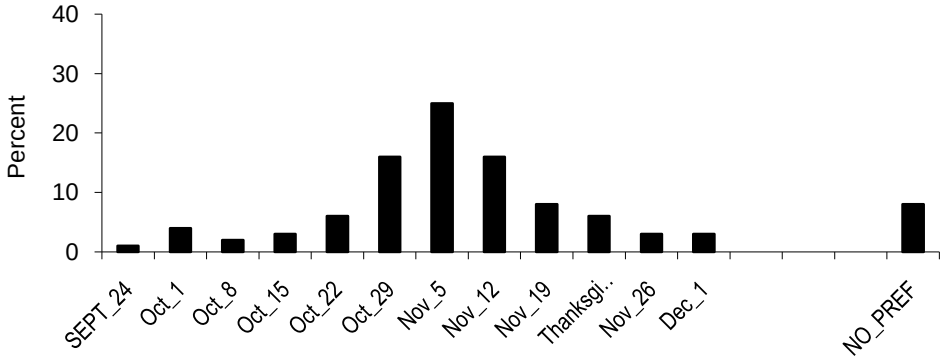
Hunter satisfaction with season dates and zone boundaries by those who primarily hunt the Lower Missouri Region.



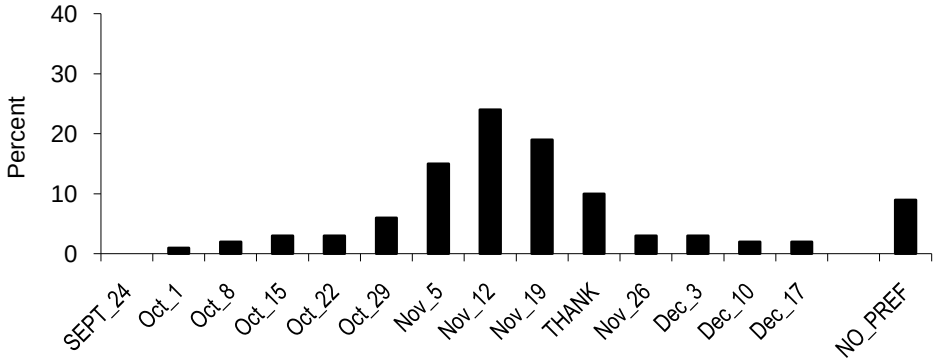
SCHELL-OSAGE: Significant public and private wetland restoration efforts have greatly enhanced hunting opportunity in this region. Much of this opportunity occurs in shallow-water habitat. Today, 25% of hunters from this region indicated they like the current opener around November 5 for a 60-day season, but 32% would like to see the season opened earlier, and 36% would preferred it to open later. During a 45-day season, hunters generally would preferred the season to open a week later than during a 60-day season. In the event of a 30-day season, 18% indicated they would like the season to open on November 19, but 16% expressed a desire for an even later opener on Thanksgiving.



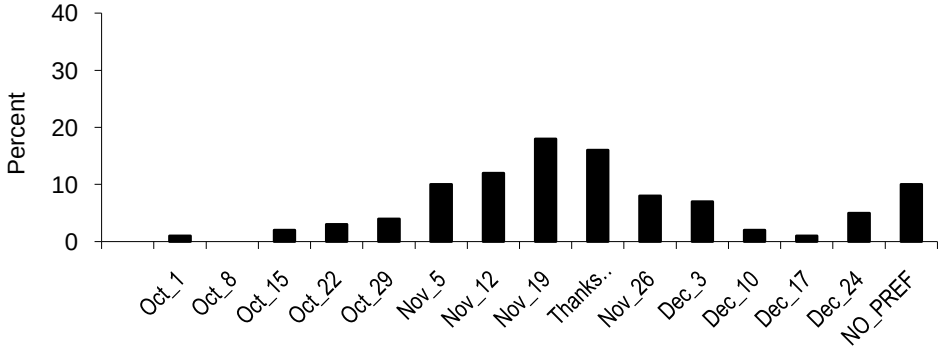
Preferred day for 60-day season to open for those who primarily hunted the Schell-Osage Region (n=191).



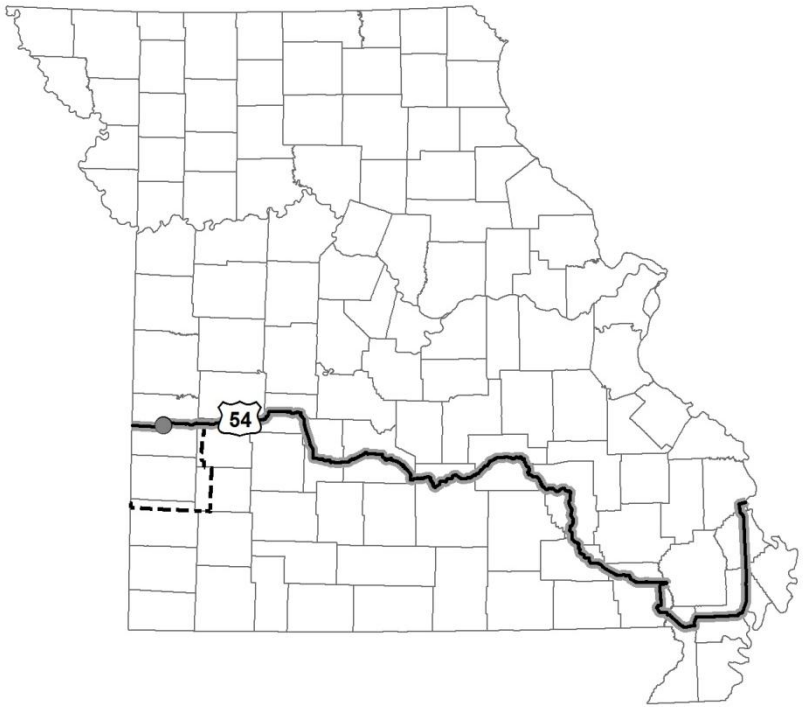
Preferred day for 45-day season to open for those who primarily hunted the Schell-Osage Region (n=186).



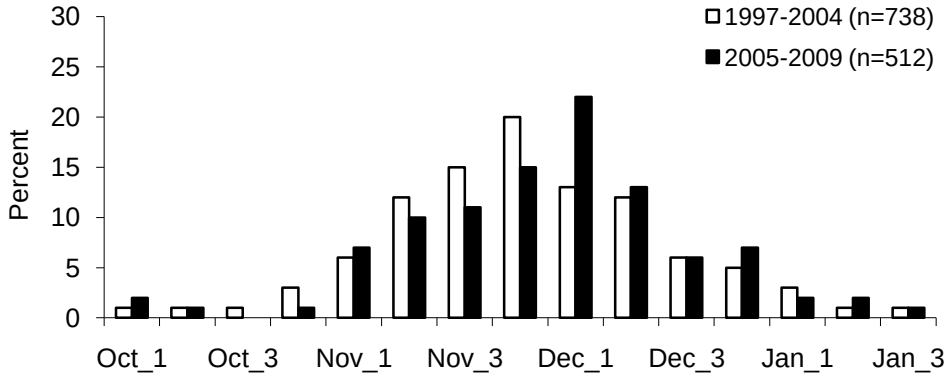
Preferred day for 30-day season to open for those who primarily hunted the Schell-Osage Region (n=182).



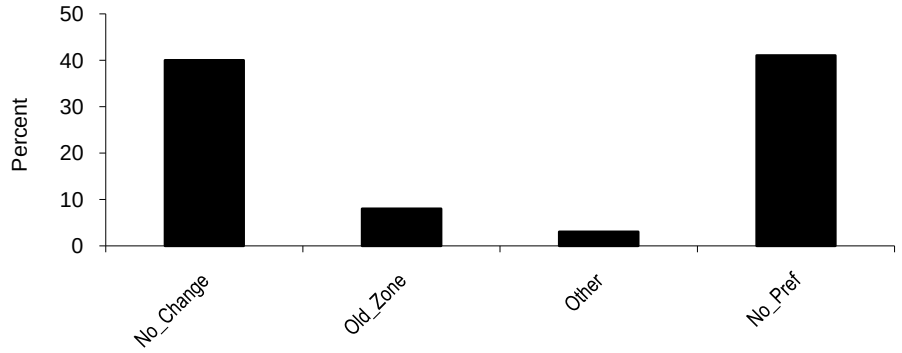
SCHELL-OSAGE: The timing of the week hunters most preferred to hunt over the past five years was later than during the previous 8 years of 60-day seasons. The first week of December is now the most popular week to hunt, with 22% of hunters selecting it as their preferred week to hunt. Forty-eight percent indicated their preferred week to hunt was sometime between the third week of November and first week of December. Only 15% of hunters in this region indicated they were dissatisfied with season dates and 11% with zone boundaries.



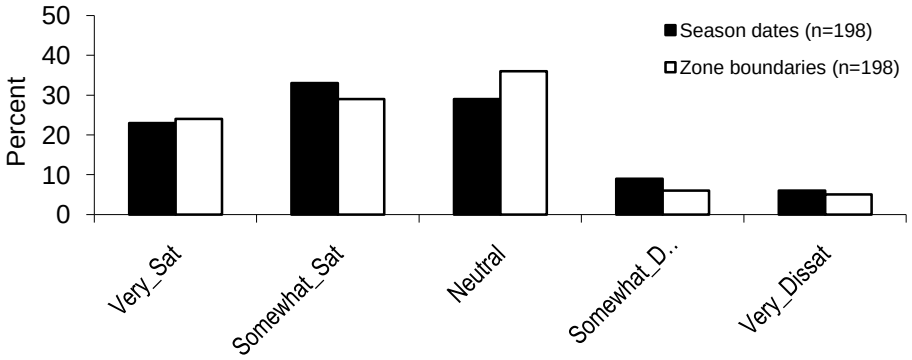
Week most preferred to hunt ducks for hunters who primarily hunted Schell-Osage Region: 1997-2004 and 2005-2009.



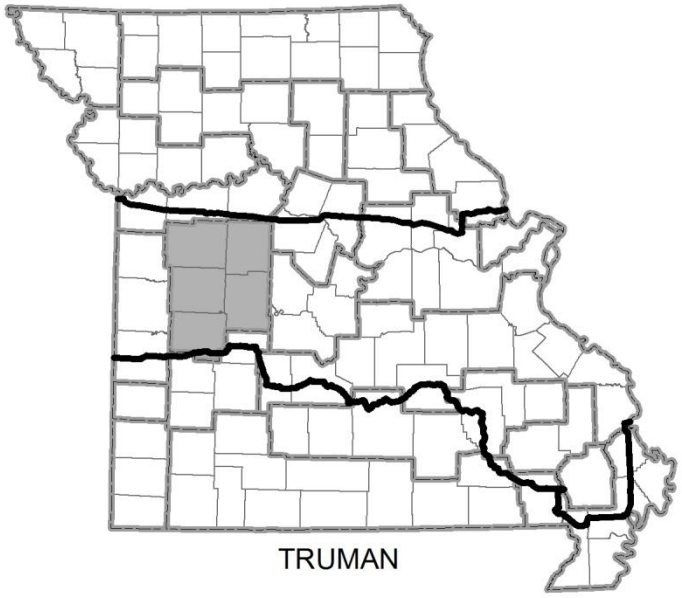
South Zone boundary preferences for western Missouri among those who primarily hunted the Schell-Osage Region (n=223).



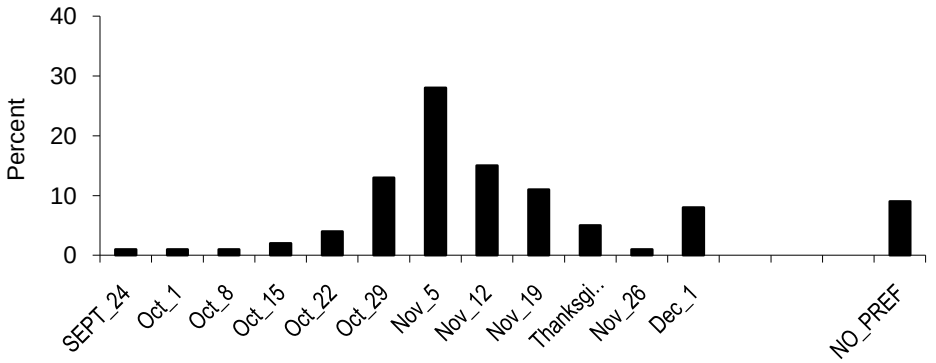
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in the Schell-Osage Region.



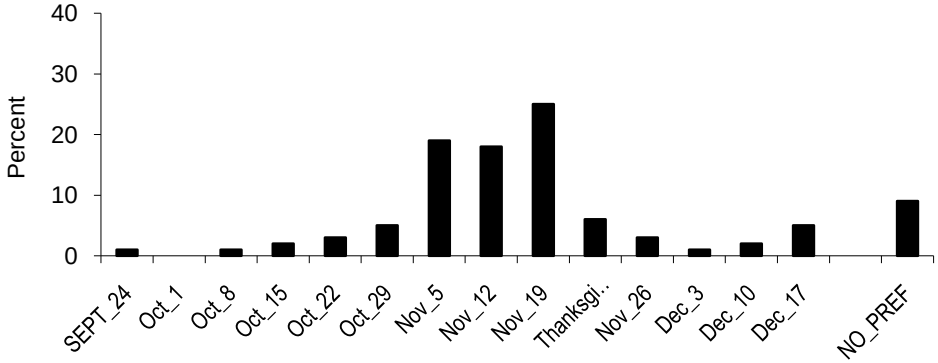
TRUMAN: With completion of Truman reservoir in the late 1970s, the distribution of mallards changed dramatically. However, as is the case with most reservoirs, as it has aged it has become less attractive to ducks. Good wetland habitat is provided in wet years when rising water floods moist soil habitat. Hunting opportunity ranges from shallow water, especially in wet years, to deep water. Similar to the Schell-Osage Region, 28% of respondents indicated they preferred the current opening date around November 5. However, those who desired a different opening date generally preferred something later with only 22% selecting an option before November 5, compared to 40% who selected a season that would open after November 5. Hunters around Truman expressed the desire for a later season in the event of a 45-day season with 25% preferring the season to open two weeks later than it would during a 60-day season. Hunters expressed little consensus about the timing of a 30-day season.



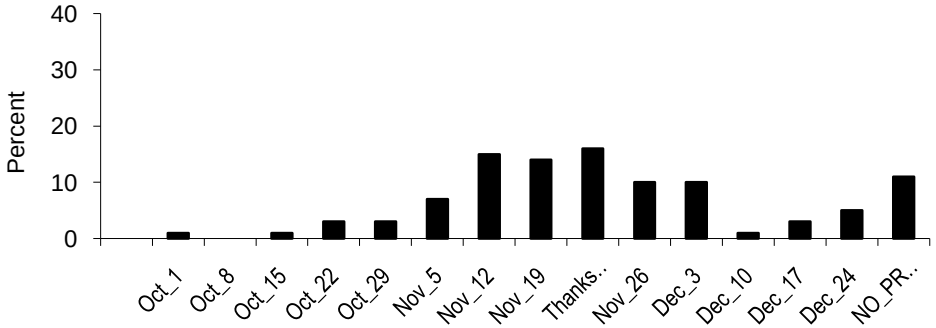
Preferred day for 60-day season to open for those who primarily hunted Truman Region (n=158).



Preferred day for 45-day season to open for those who primarily hunted Truman Region (n=150).

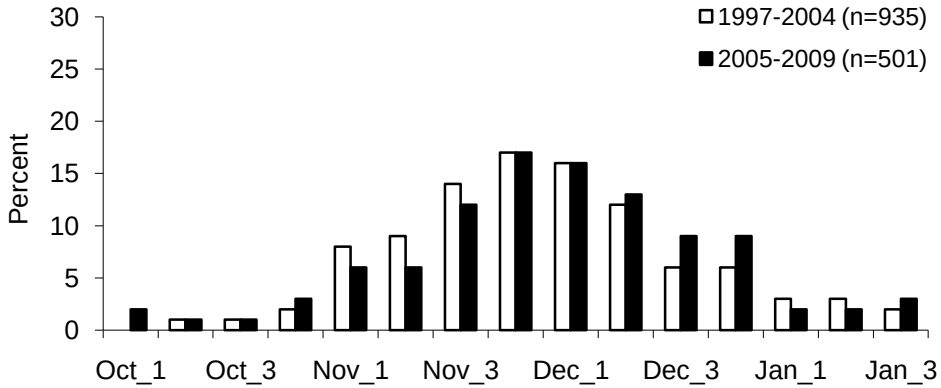


Preferred day for 30-day season to open for those who primarily hunted Truman Region (n=149).

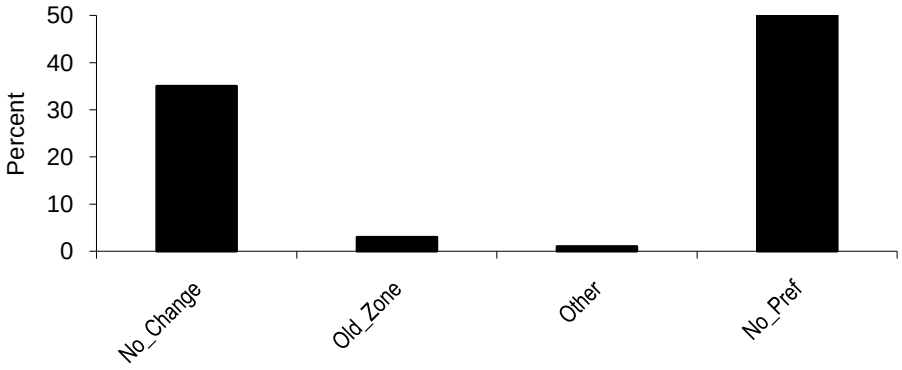


TRUMAN: The week hunters most preferred to hunt was similar among hunters from the Schell-Osage and Truman Regions. Nearly an equal number of hunters from the Truman Region indicated that they preferred to hunt most during the last week of November (17%) or the first week of December (16%). Twenty-one percent of respondents indicated they were dissatisfied with season dates and only 7% were dissatisfied with zone boundaries.

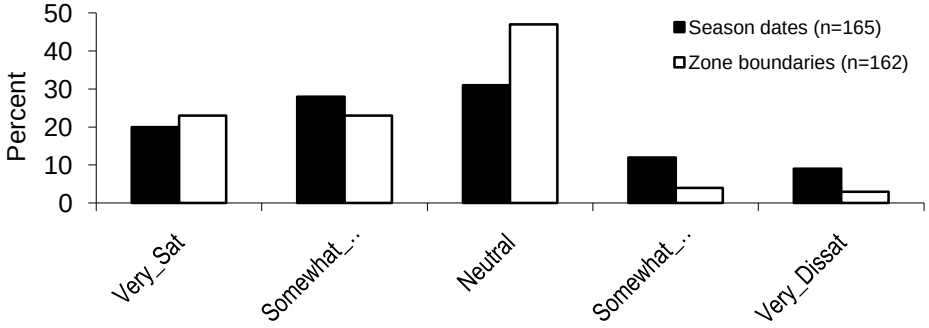
Week most preferred to hunt ducks for hunters who primarily hunted the Truman Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for western Missouri among those who primarily hunted the Truman Region (n=181).

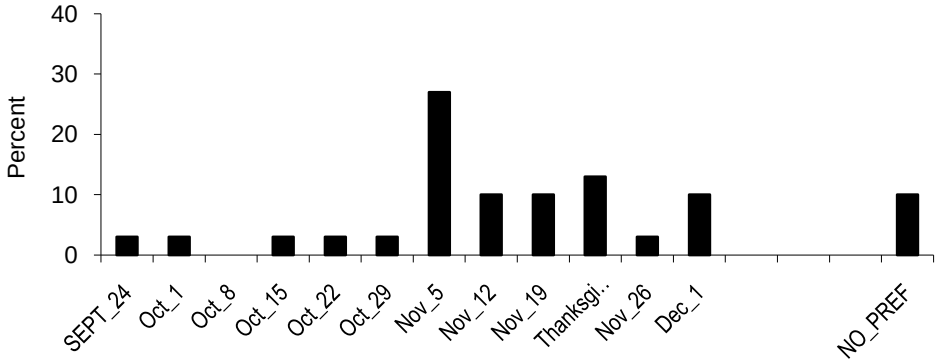


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in the Truman Region.

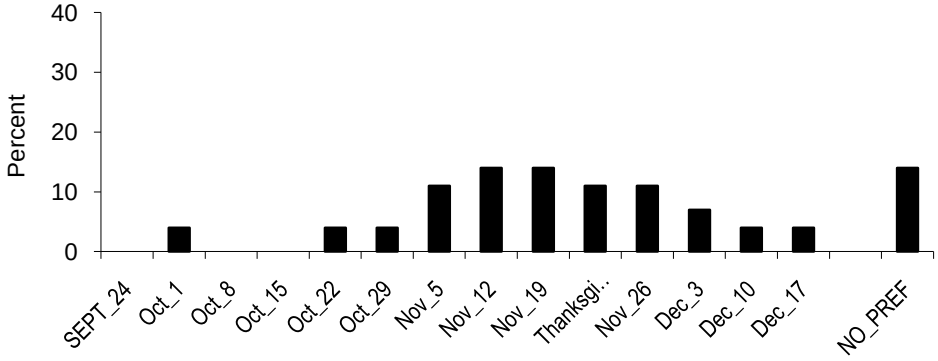


LAKE OZARK/OSAGE RIVER: Because of deep water (reservoirs) and flowing water (Osage River), this region offers late season hunting opportunity for mallards, which often remain well into the winter. In addition, the streams in this region provide early wood duck hunting opportunity. Based on a very limited sample size, respondents most frequently selected the current Middle Zone opening date around November 5 as their preferred option for a 60-day season. However, 46% indicated a later season preference and, on average, a November 12 opener was preferred during a 60-day season. Hunter preferences were widely varied in regards to a 45- or 30-day season.

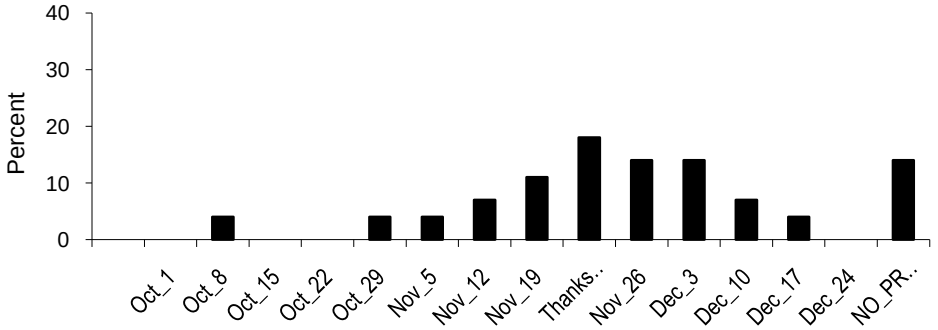
Preferred day for 60-day season to open for those who primarily hunted the Lake Ozark/Osage River Region (n=30).



Preferred day for 45-day season to open for those who primarily hunted the Lake Ozark/Osage River Region (n=28).

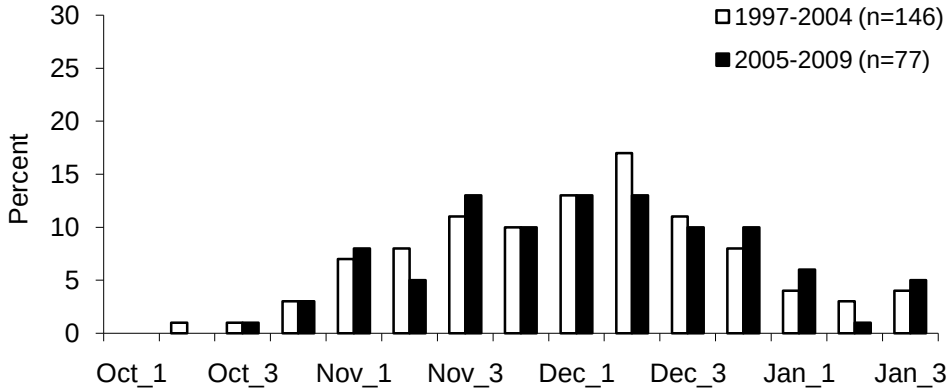


Preferred day for 30-day season to open for those who primarily hunted the Lake Ozark/Osage River Region (n=28).

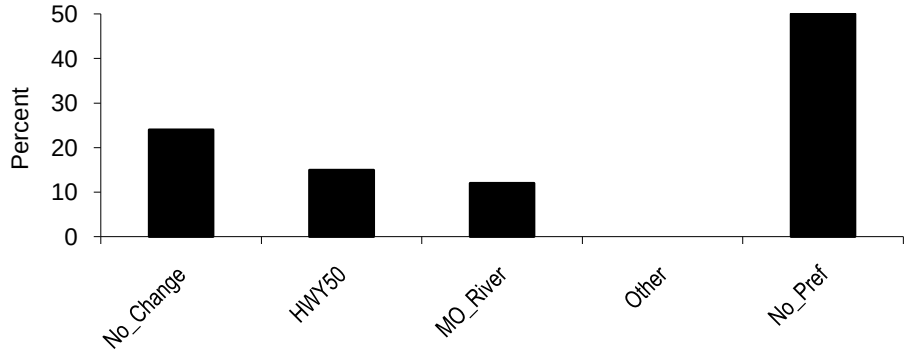


LAKE OZARK/OSAGE RIVER: Respondents held a wide range of opinions concerning the week they most preferred to hunt. Preferences for December hunting likely reflect deep water hunting opportunity after the freeze-up of shallow wetlands. Given the wide-range of opinions about the timing of duck season, it is not surprising that 26% of respondents expressed dissatisfaction with season dates and 25% with zone boundaries.

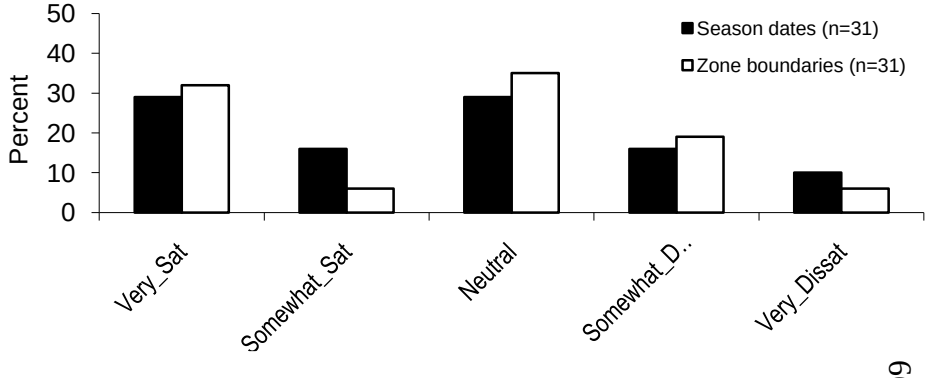
Week most preferred to hunt ducks for hunters who primarily hunted the Lake Ozark/Osage River Region: 1997-2004 and 2005-2009.



North Zone boundary preferences for western Missouri among those who primarily hunted the Lake Ozark/Osage River Region (n=34).

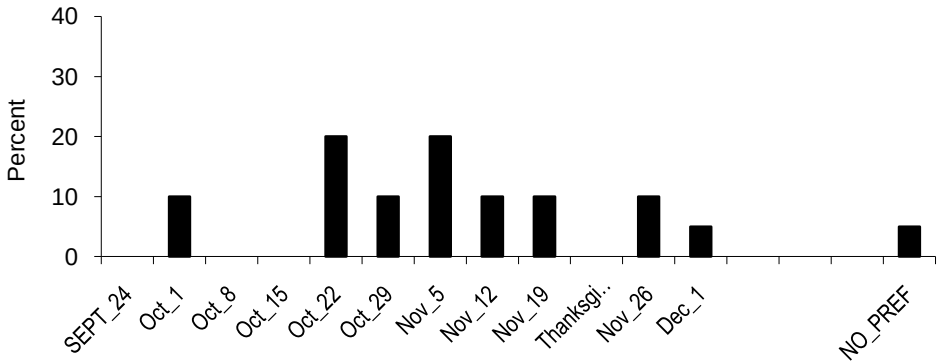


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Lake Ozark/Osage River Region.

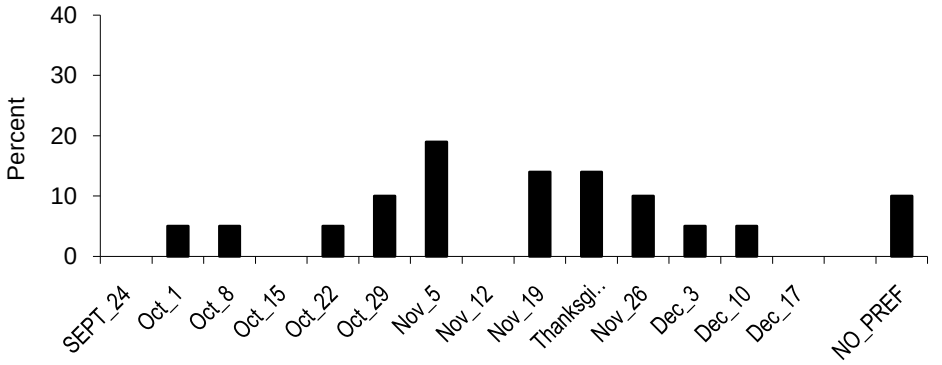


MID-MISSISSIPPI RIVER: The primary wetland habitats in this region are associated with the Mississippi River and floodplain. Wetlands are limited along this portion of the Mississippi River compared to the Bootheel or along the river above St. Louis. Based on a very limited sample size, hunters expressed a wide range of opinions about the timing of 60-, 45-, and 30-day duck seasons.

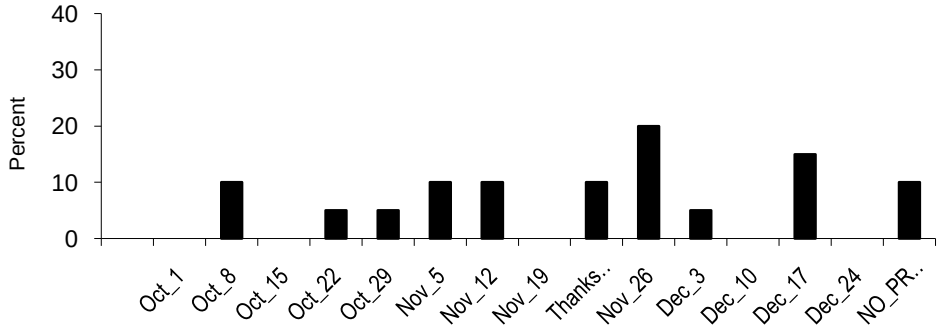
Preferred day for 60-day season to open for those who primarily hunted the Mid-Mississippi Region (n=20).



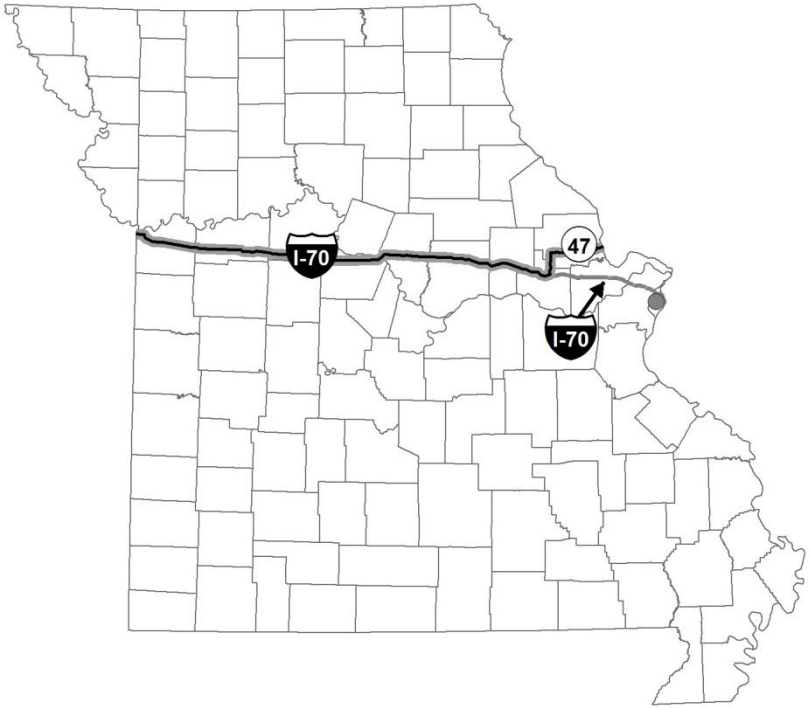
Preferred day for 45-day season to open for those who primarily hunted the Mid-Mississippi Region (n=21).



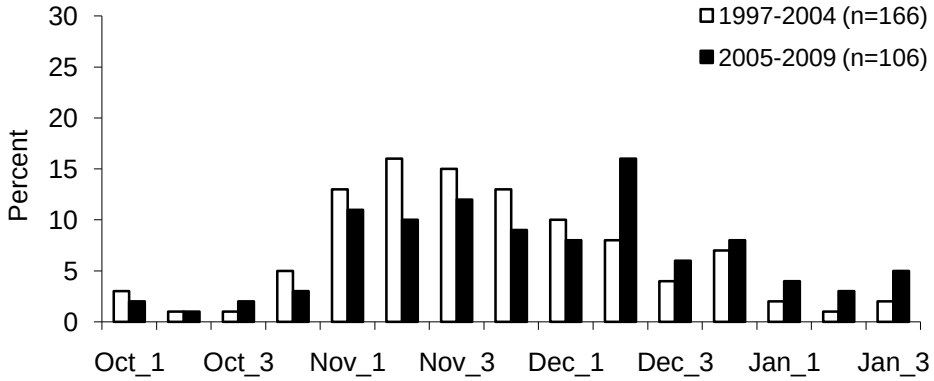
Preferred day for 30-day season to open for those who primarily hunted the Mid-Mississippi Region (n=20).



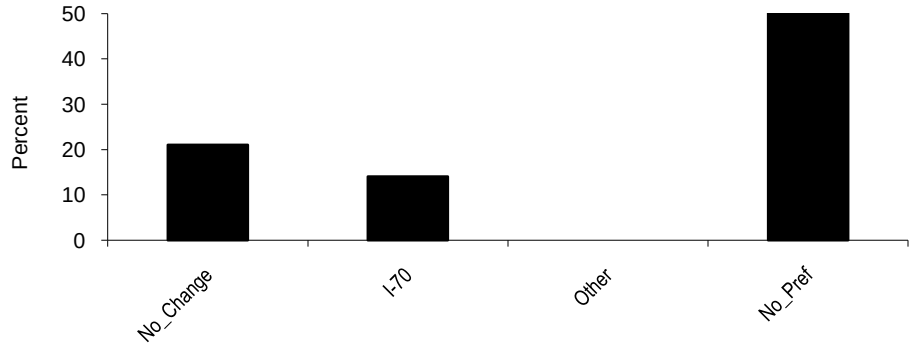
MID-MISSISSIPPI RIVER: Similar to opinions about season dates, hunters indicated a wide-range of possibilities for their most preferred week to hunt. Although hunters expressed a diversity of opinions about season timing, only 15% indicated they were dissatisfied with season dates and zone boundaries.



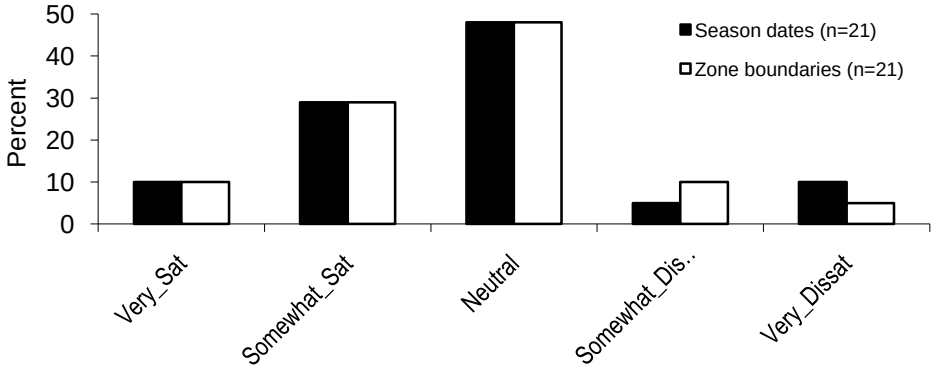
Week most preferred to hunt ducks for hunters who primarily hunted the Mid-Mississippi River Region: 1997-2004 and 2005-2009.



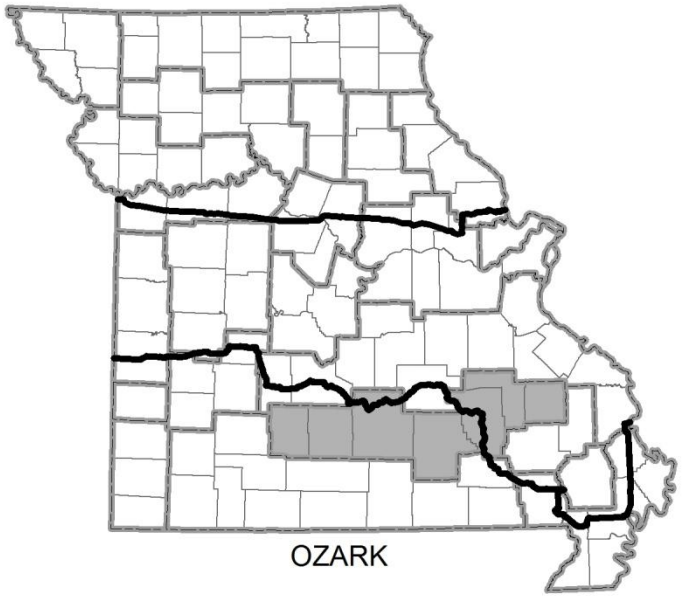
North Zone boundary preferences for eastern Missouri among those who primarily hunted the Mid-Mississippi Region (n=28).



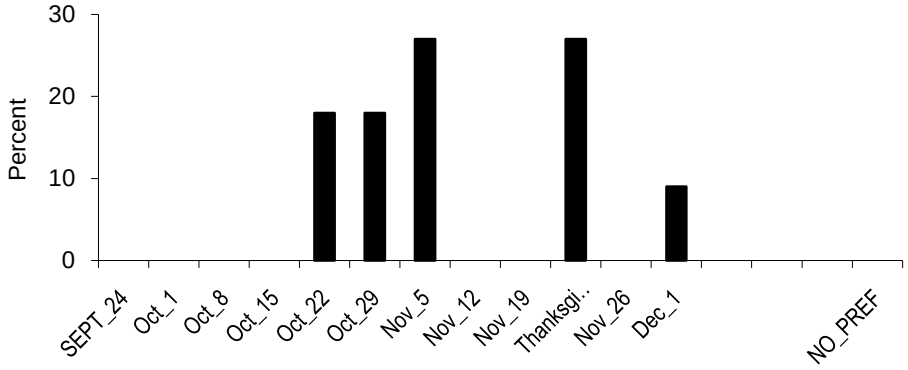
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Mississippi Region.



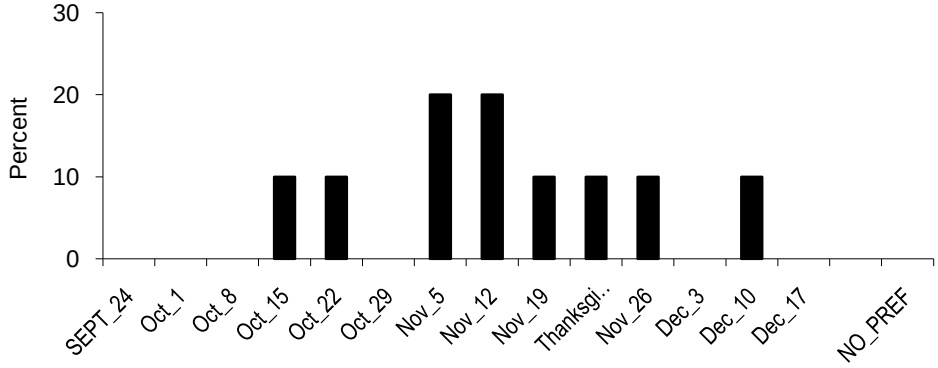
OZARKS: Limited waterfowl hunting takes place in the Ozarks. Hunting is primarily for wood ducks on Ozark streams along with some hunting for early season migrants, and late-season mallard hunting on Clearwater Reservoir. The sample size is too small to draw conclusions about season date preferences.



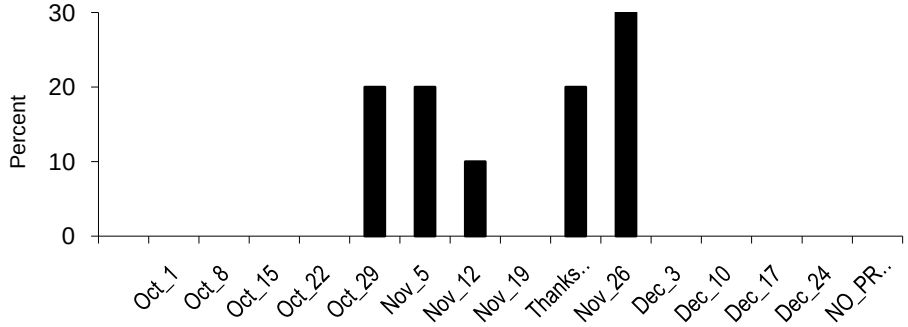
Preferred day for 60-day season to open for those who primarily hunted the Ozarks Region (n=11).



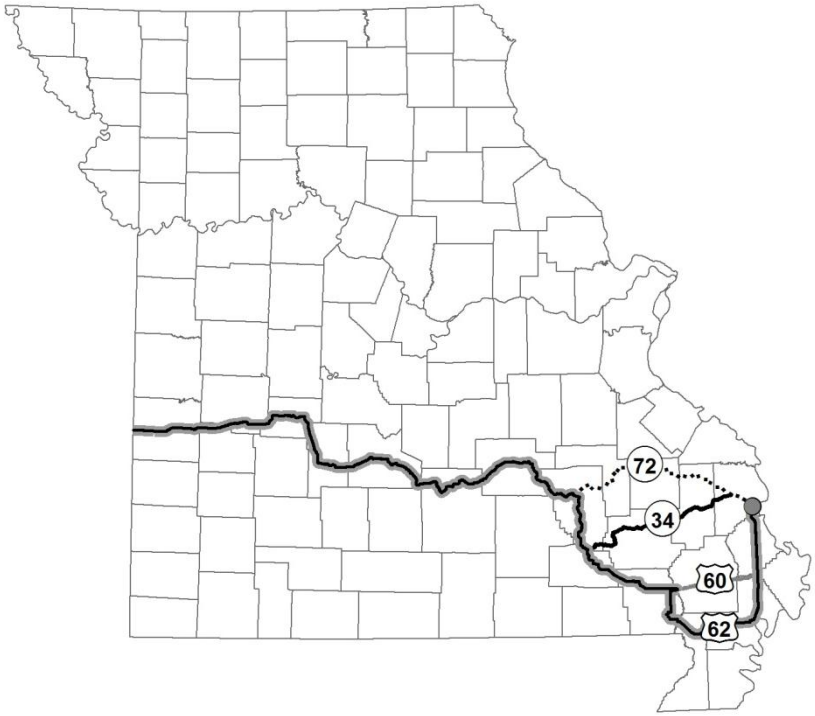
Preferred day for 45-day season to open for those who primarily hunted the Ozarks Region (n=10).



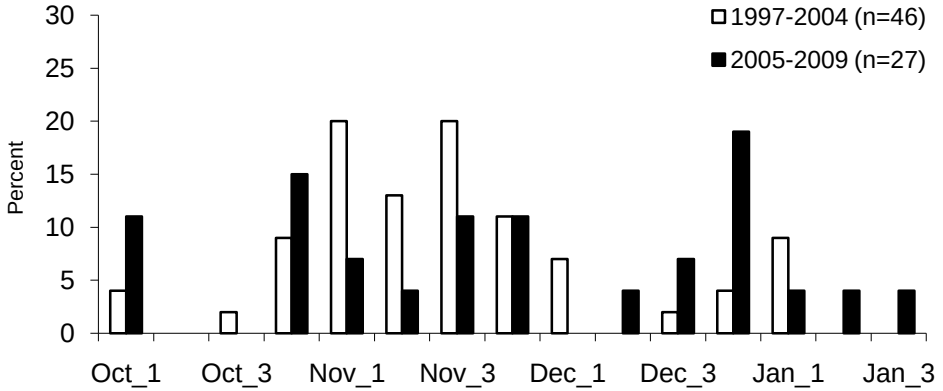
Preferred day for 30-day season to open for those who primarily hunted the Ozarks Region (n=10).



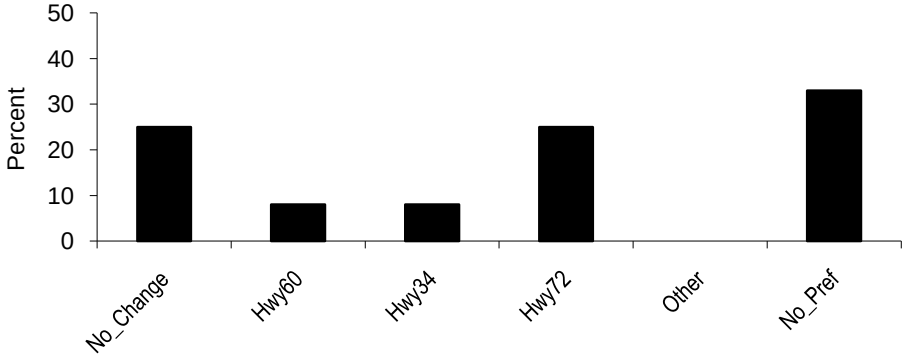
OZARKS: Based on a very limited sample size, it appears hunters in the Ozarks have a wide range of opinions about the best time to hunt ducks. These differences likely reflect some hunter preferences for early season wood duck hunting along streams and others' preferences to hunt ponds and rivers later in the season when shallow water freezes.



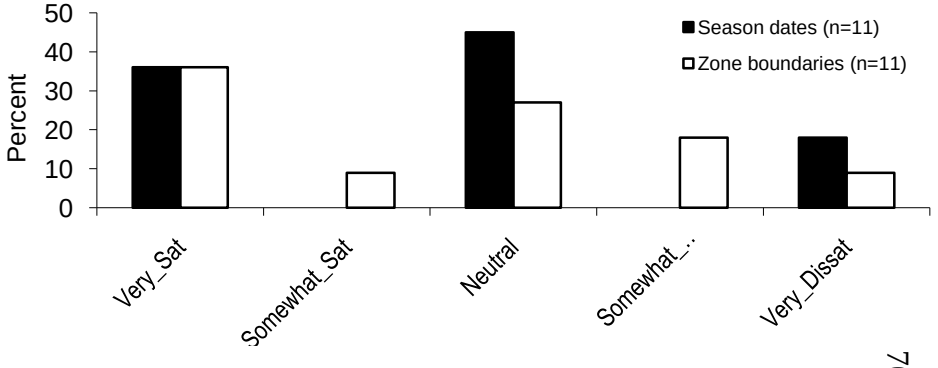
Week most preferred to hunt ducks for hunters who primarily hunted the Ozarks Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for eastern Missouri among those who primarily hunted the Ozarks Region (n=12).

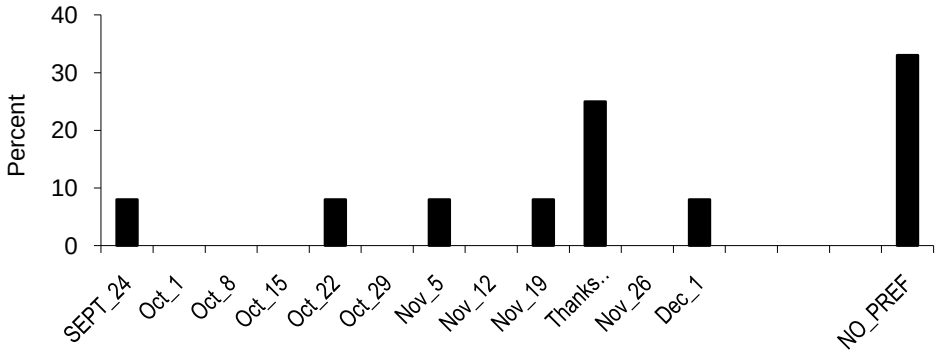


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in the Ozarks Region.

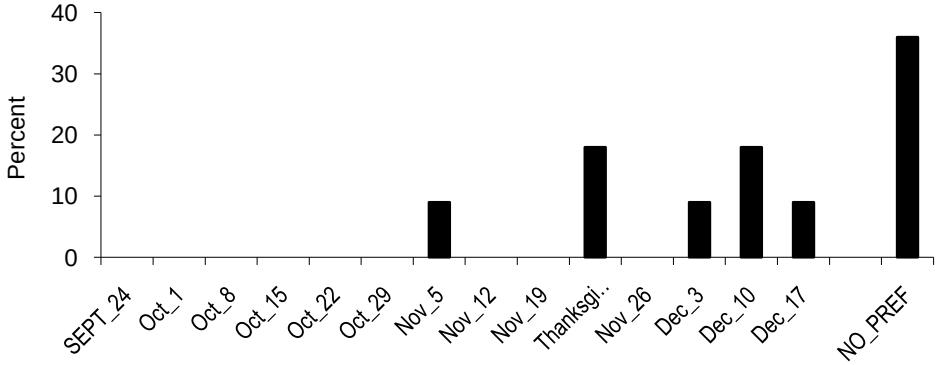


BARTON COUNTY: In 1991, a change in the South Zone boundary was made to accommodate early season hunting opportunity in Barton County (Middle Zone) yet retain later season hunting opportunity on Stockton Lake and Spring River. This change was in lieu of a proposed boundary of I-44 made initially in 1990. In response to hunter input at the 2001 workshops in Carthage and Lamar, the boundary was moved to HWY 54. Very few respondents in the 2009 survey indicated that they hunted in Barton County.

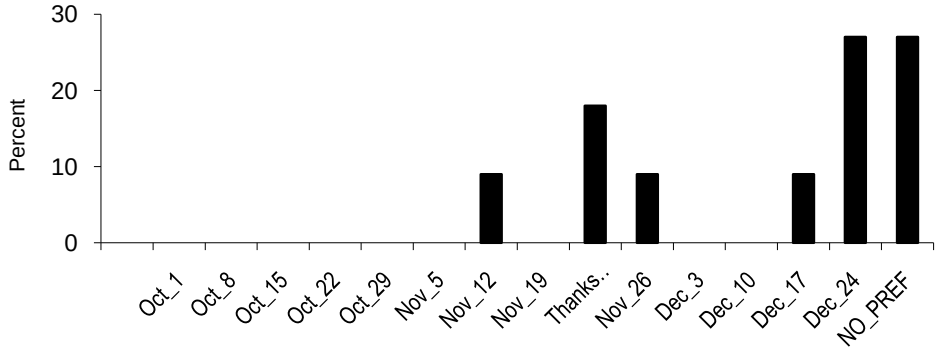
Preferred day for 60-day season to open for those who primarily hunted in Barton County (n=12).



Preferred day for 45-day season to open for those who primarily hunted in Barton County (n=11).

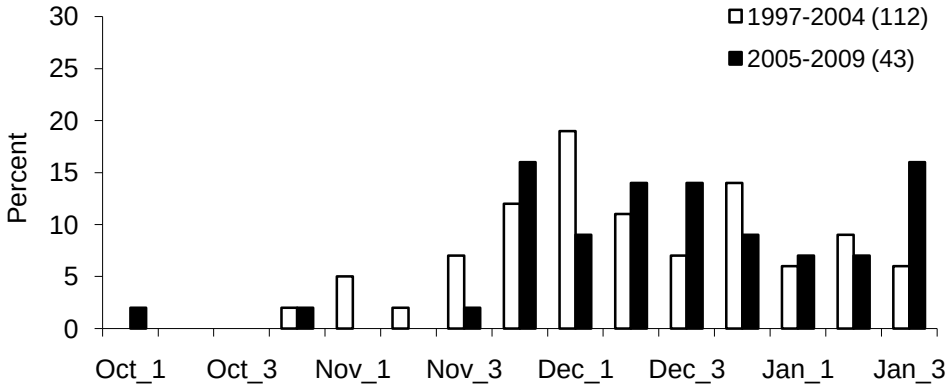


Preferred day for 30-day season to open for those who primarily hunted in Barton County (n=11).

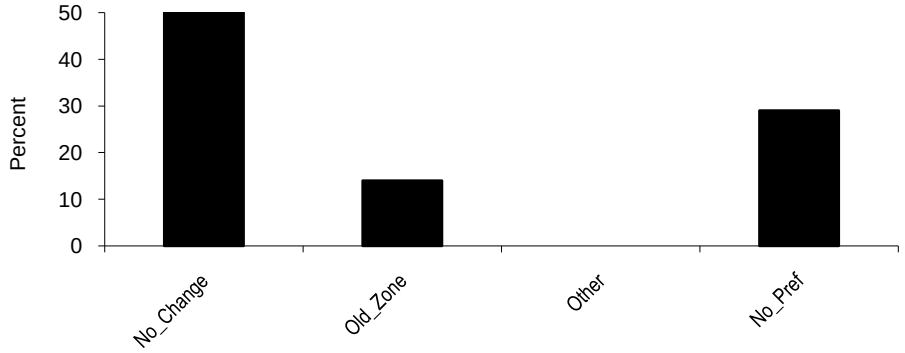


BARTON COUNTY: Based on a very limited sample, it appears that hunters in Barton County preferred later seasons than in years past. During the last five years, 76% percent of respondents indicated their most preferred week to hunt was in December or January; however, 16% preferred the last week in November. Fourteen percent of respondents who hunted in Barton County indicated they would prefer the zone boundary that was in place prior to 2001.

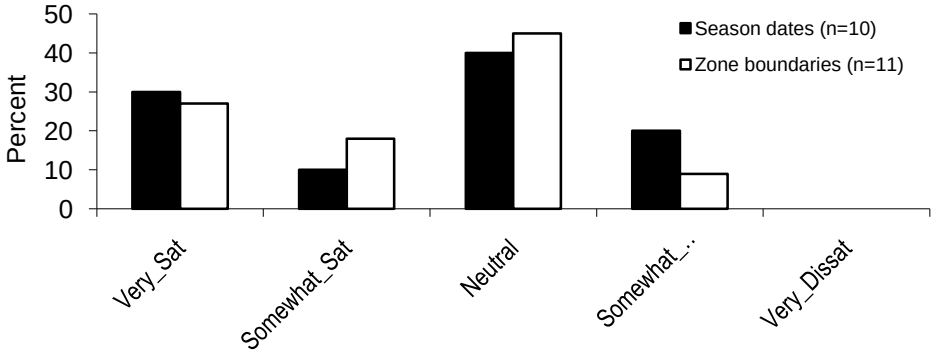
Week most preferred to hunt ducks for hunters who primarily hunted in Barton County: 1997-2004 and 2005-2009.



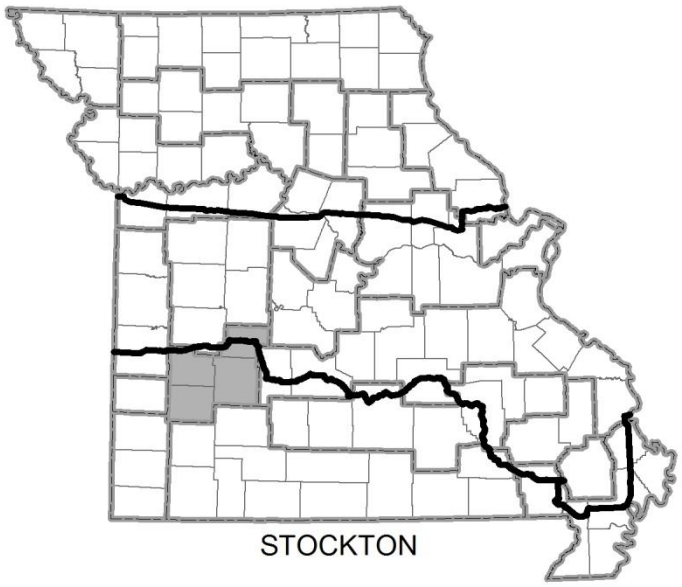
South Zone boundary preferences for western Missouri among those who primarily hunted in Barton County (n=14).



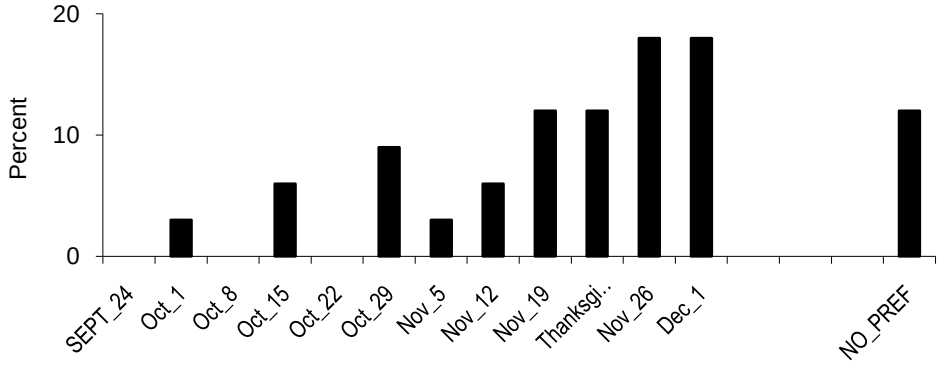
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in Barton County.



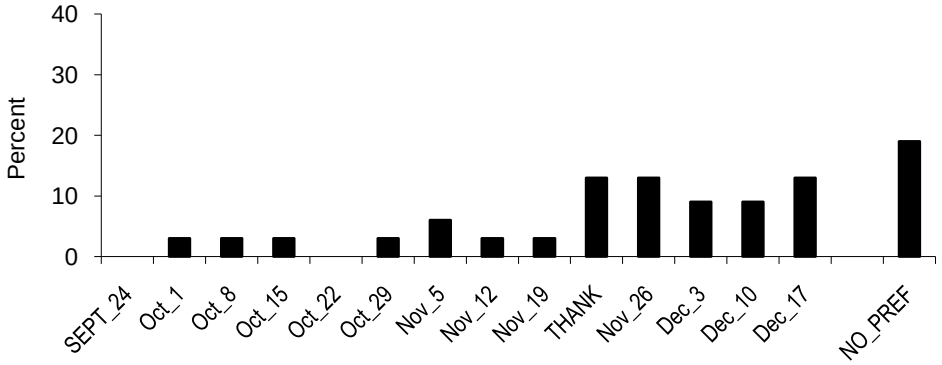
STOCKTON: As shallow wetlands freeze throughout the state, some mallards shift from shallow water habitat to Southwest Missouri reservoirs, where they often remain well into winter. When duck zones initially were established in 1977, Stockton Lake was in the North Zone. This was changed when zones were reconfigured in 1980; the original boundary in Southwest Missouri of HWY 160 was amended to HWY 54. Stockton remained in the South Zone when 3 zones were established in 1991, even though the area to the west was incorporated into the Middle Zone to accommodate earlier season preferences. Based on a very limited sample size, an equal percentage of respondents (12%) preferred a 60-day season open November 19, earlier than the current opener, or Thanksgiving Day, the current South Zone opener. However, 18% preferred a later opening date of November 26 and an additional 18% preferred a December 1 opener. Twenty-eight percent preferred an opening date earlier than November 19 for a 60-day season. Hunters were very divided in their opinions about 45- or 30-day seasons.



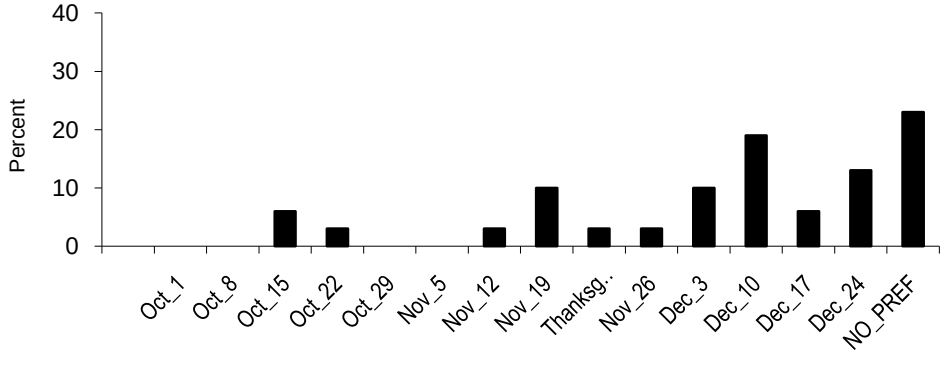
Preferred day for 60-day season to open for those who primarily hunted the Stockton Region (n=33).



Preferred day for 45-day season to open for those who primarily hunted the Stockton Region (n=32).

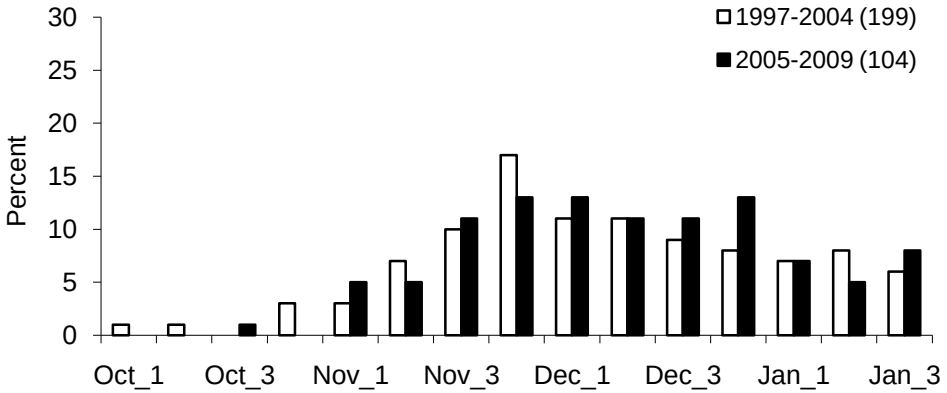


Preferred day for 30-day season to open for those who primarily hunted the Stockton Region (n=31).

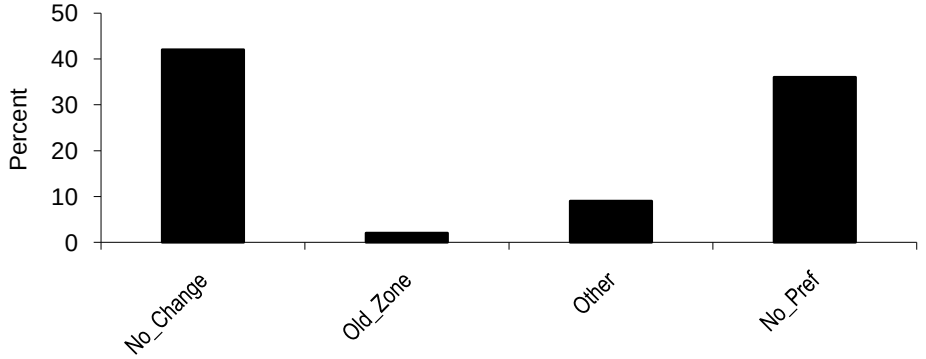


STOCKTON: Hunters appeared divided about the timing of the week they most preferred to hunt with nearly an equal percentage of hunters selecting from the third week of November through the fourth week of December. Twenty-two percent of respondents from this region were dissatisfied with season dates and 17% with zone boundaries.

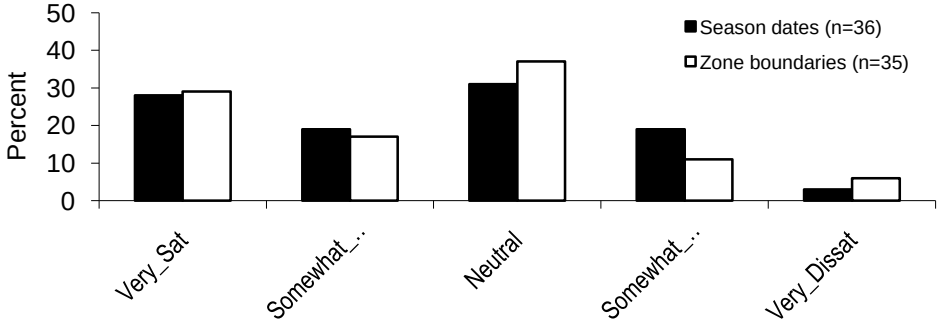
Week most preferred to hunt ducks for hunters who primarily hunted the Stockton Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for western Missouri among those who primarily hunted the Stockton Region (n=45).

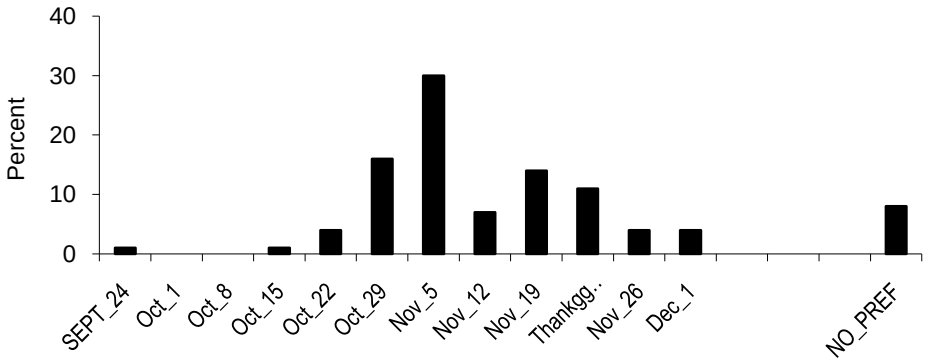


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted in the Stockton Region.

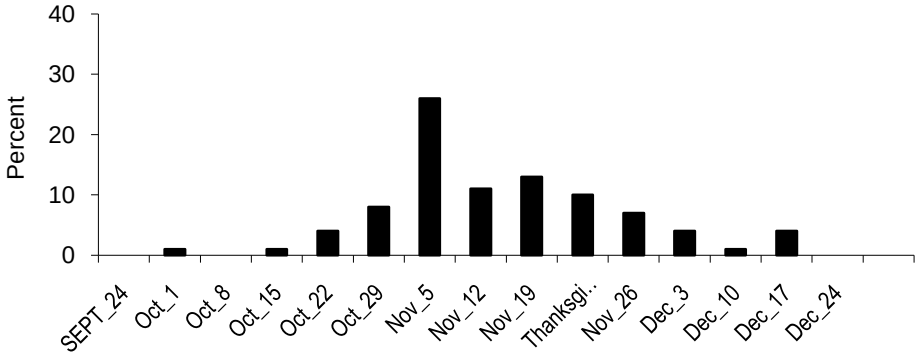


DUCK CREEK: Combined, Duck Creek CA and Mingo NWR (almost 30,000 acres) provide one of Missouri's primary wetland complexes. Flooded bottomland hardwoods are found in few other locations in the state. This region also represents one of the main areas MDC receives inquiries about potential zone boundary changes. The results of the 2009 survey indicate that 30% of hunters in this region preferred the current Middle Zone opening date around November 5 for a 60-day season; however, 40% preferred a later opening date, and 22% an earlier opening date. If this region would open on Thanksgiving, similar to the South Zone, it would be later than desired by 73% of the hunters in this region. Somewhat surprising, 40% of respondents do not want the season to open any later than it does now during a 45-day season. Opinions were much more divided in regards to a 30-day season.

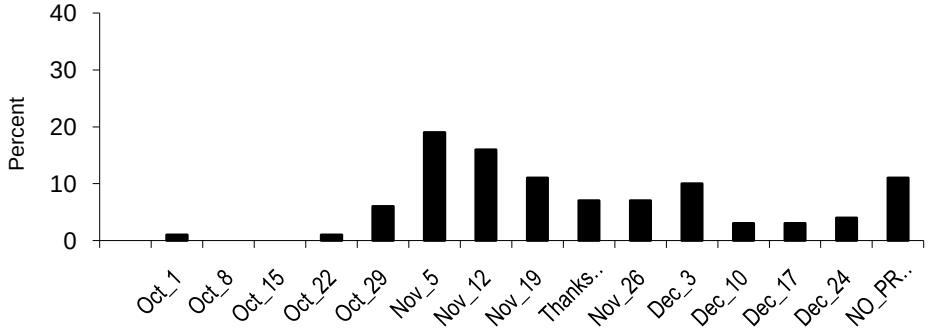
Preferred day for 60-day season to open for those who primarily hunted the Duck Creek Region (n=74).



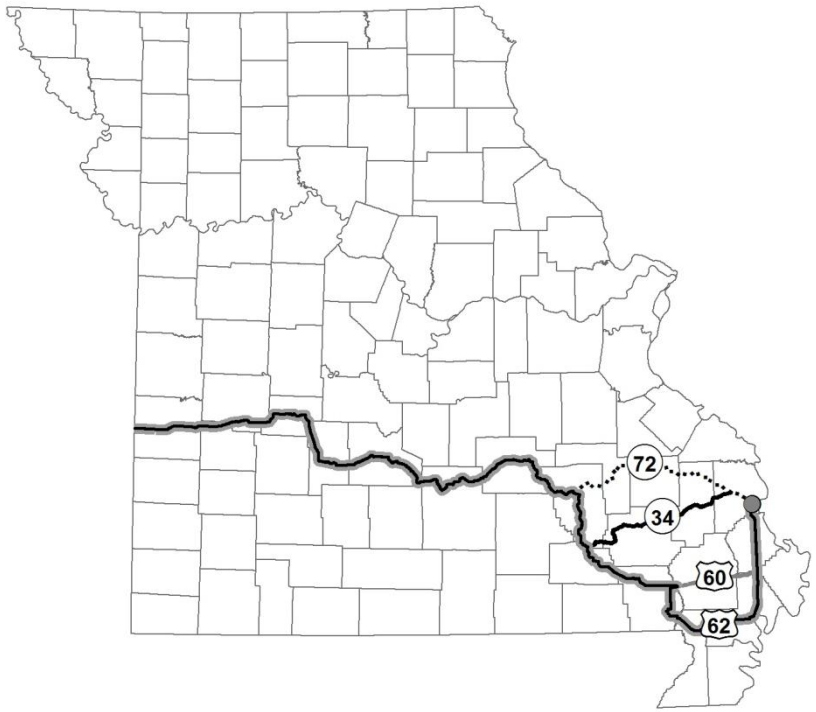
Preferred day for 45-day season to open for those who primarily hunted the Duck Creek Region (n=72).



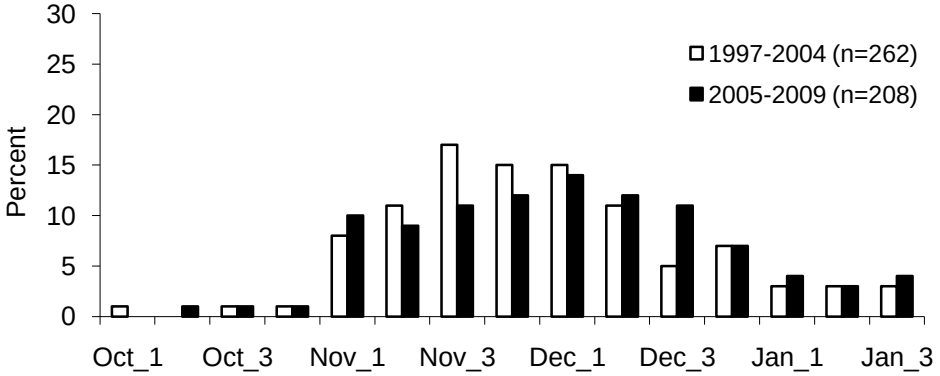
Preferred day for 30-day season to open for those who primarily hunted the Duck Creek Region (n=70).



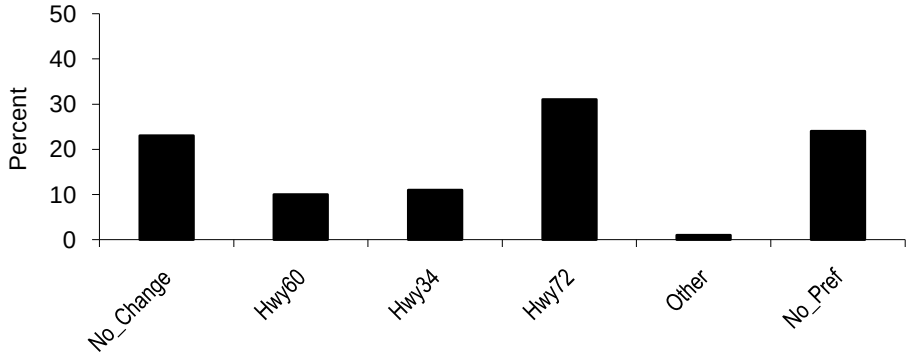
DUCK CREEK: Ducks first arrive at Duck Creek and Mingo at approximately the same time as in the remainder of the state, but often are present through much of the winter. Thus, hunters are able to take advantage of early season migration events and late season opportunity as ducks frequently redistribute in response to freeze/thaw conditions. As a result of the extended period of duck use in this region, there is little agreement about the week hunters most preferred to hunt. Some hunters prefer hunting opportunity for early season migrants and the chance to take advantage of "flight" days, while others prefer late season hunting. Similar numbers of hunters indicated their preferred week to hunt was anywhere from the third week of November to the third week of December. Twenty-eight percent indicated dissatisfaction with season dates and 23% with zone boundaries. Of those who had an opinion about zone boundaries, 41% would like to see it moved to HWY 72 and 30% would like to see it remain where it is.



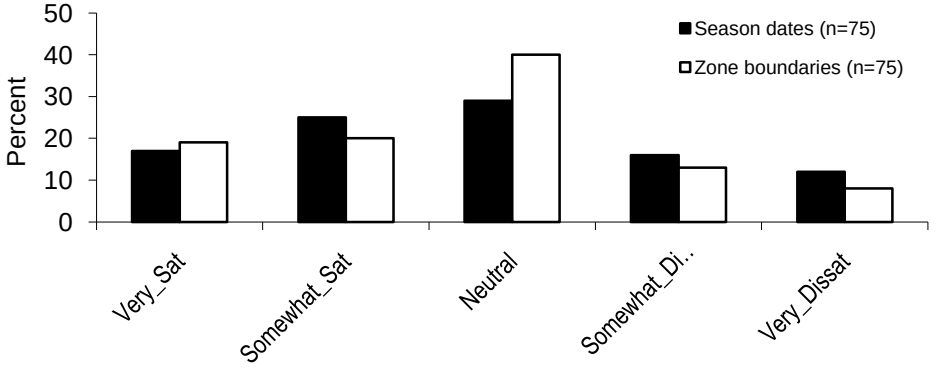
Week most preferred to hunt ducks for hunters who primarily hunted the Duck Creek Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for eastern Missouri among those who primarily hunted the Duck Creek Region (n=80).

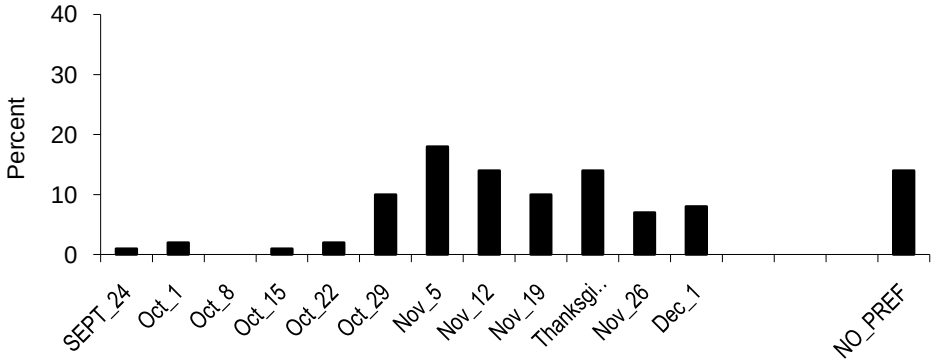


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Duck Creek Region.

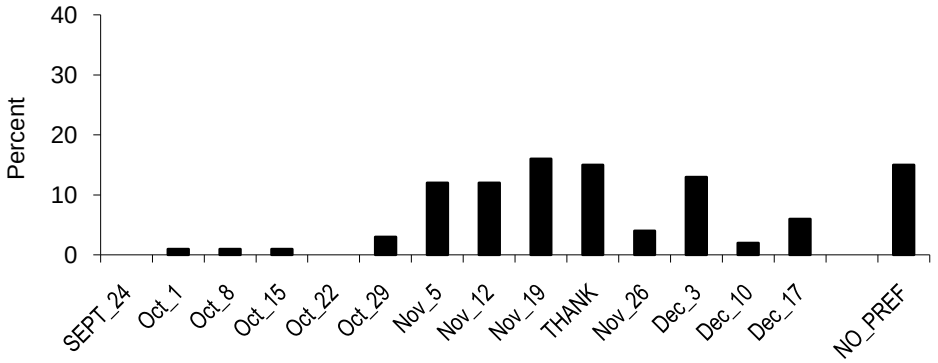


OTTER SLOUGH: Acquisition and expansion of Otter Slough CA during the 1980s and 1990s, private wetland development, and rice production have expanded the amount of shallow water habitat available. This Region was in the South Zone until 1986, when adjustments in zone boundaries separated it from habitats associated with the Lower Mississippi and St. Francis rivers. The addition of a third zone in 1991 allowed season timing to include much of December as seasons progressively increased in length to 60 days by 1997. This region also represents one of the primary areas MDC receives inquiries about potential zone boundary changes. Hunters most frequently indicated they would like a 60-day season to open on November 5 (18%), but only slightly fewer would like the season to open on either November 12, November 19, or Thanksgiving. Overall, 16% would like an earlier opener, and 53% a later opener. However, if this region was included in the South Zone with a Thanksgiving opener, the season would be later than desired by 58% of the hunters. On average, hunters would like a 60-day season to open a week later than it currently does in this region. Hunters expressed little agreement about when they would like a 45-or 30-day season to occur.

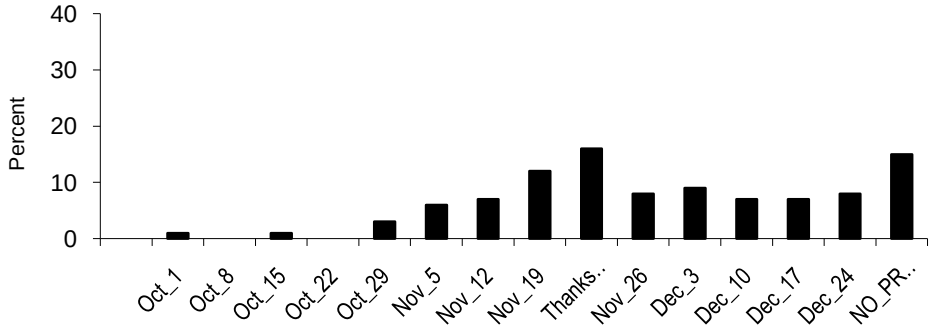
Preferred day for 60-day season to open for those who primarily hunted the Otter Slough Region (n=166).



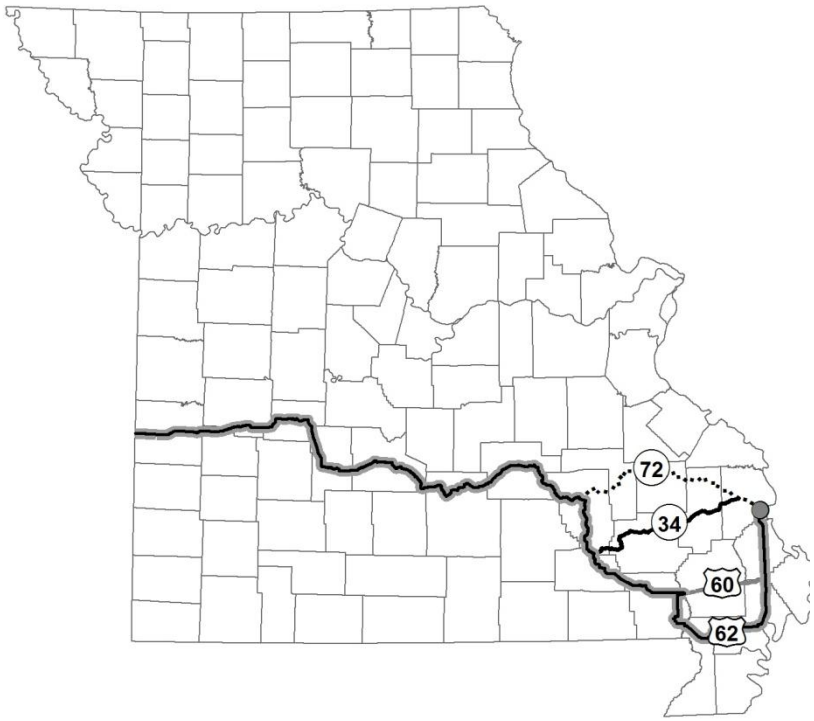
Preferred day for 45-day season to open for those who primarily hunted the Otter Slough Region (n=153).



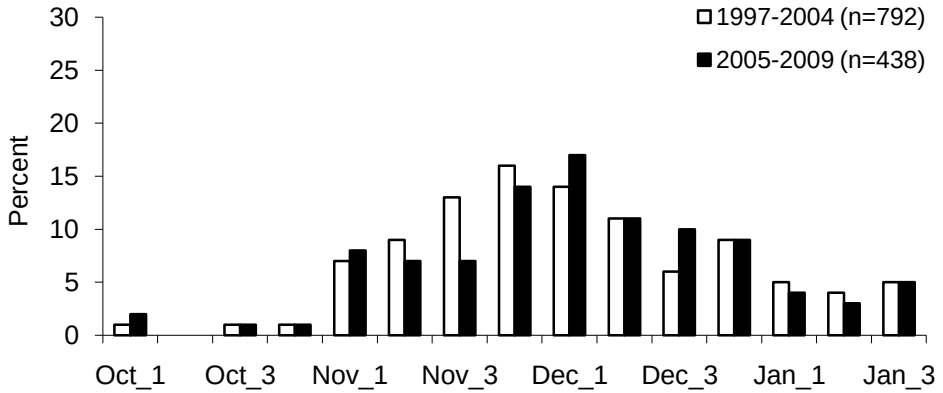
Preferred day for 30-day season to open for those who primarily hunted the Otter Slough Region (n=154).



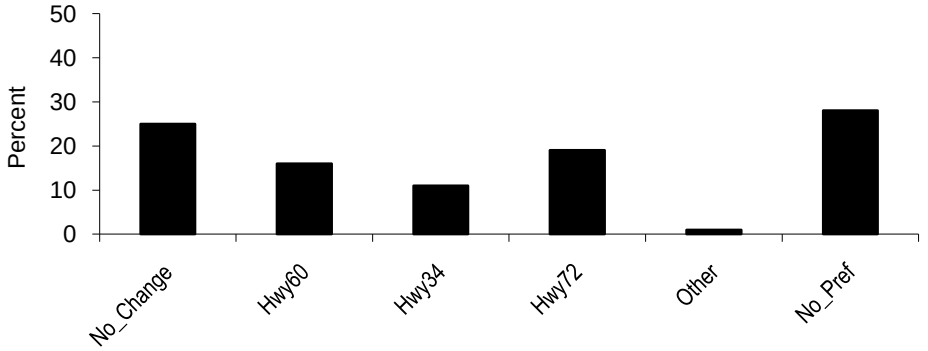
OTTER SLOUGH: Similar to almost every region of the state, hunters in the Otter Slough Region indicated they most preferred to hunt during the last week of November and the first week of December. Overall, 36% indicated their most preferred week to hunt was in November, 47% in December, and 12% in January. Twenty-nine percent of respondents from this region expressed dissatisfaction with season dates and 26% with zone boundaries. While 28% indicated they had no preference where the zone boundary should be located, of those with an opinion, 35% preferred the current location and 26% felt it should be moved to HWY 72.



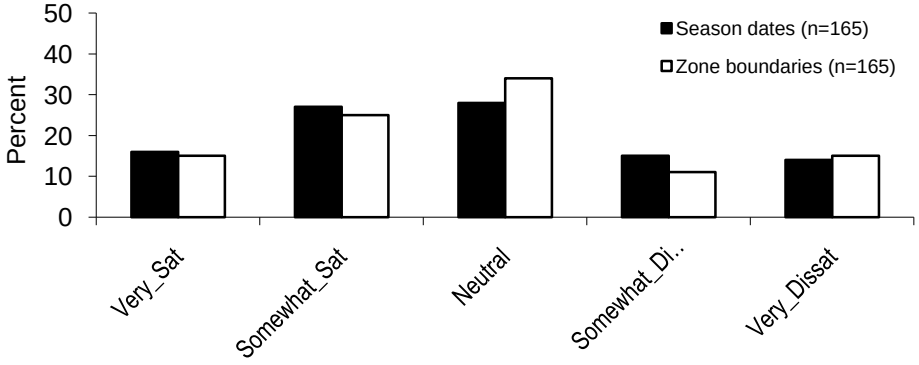
Week most preferred to hunt ducks for hunters who primarily hunted the Otter Slough Region: 1997-2004 and 2005-2009.



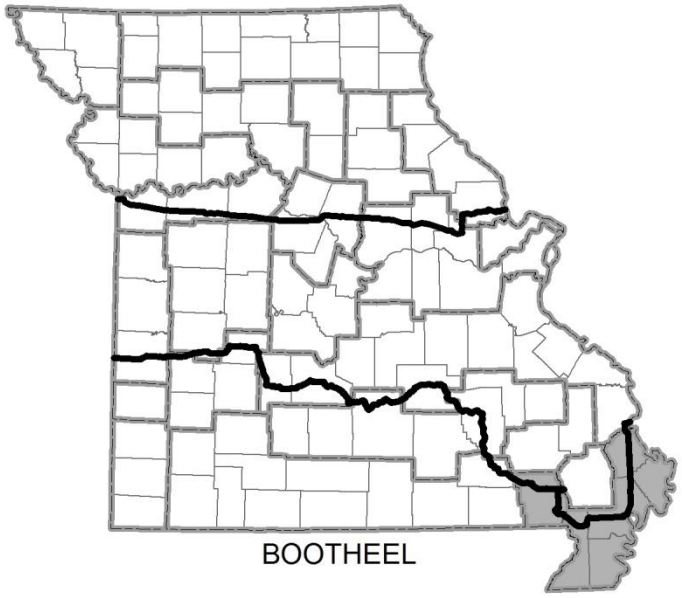
South Zone boundary preferences for eastern Missouri among those who primarily hunted the Otter Slough Region (n=175).



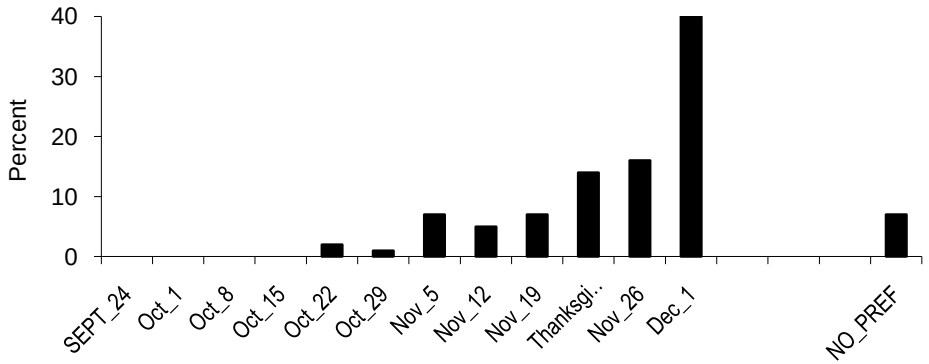
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Otter Slough Region.



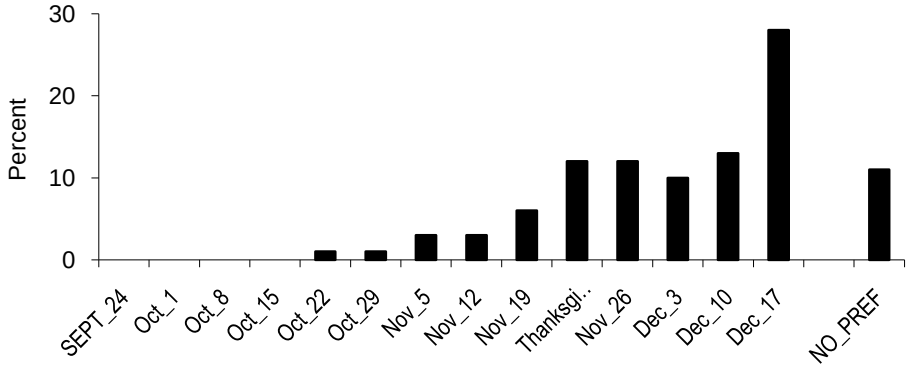
BOOTHEEL: Rice production, late season flooding, and open water associated with the Lower Mississippi, St. Francis, and Black rivers provide hunting opportunity in the Bootheel. This region has been included in the South Zone since 1977. Hunters in the Bootheel expressed the most agreement about season dates compared to any other region in Missouri. During a 60-day season, 40% would be willing to forgo hunting over Thanksgiving weekend in order to open the season a week and a half later on December 1, the latest the federal framework would allow. Although most hunters selected a December 1 opener, 52% indicated they would like a 60-day season to open on November 26 or earlier. This pattern held true for 45- and 30-day seasons as well.



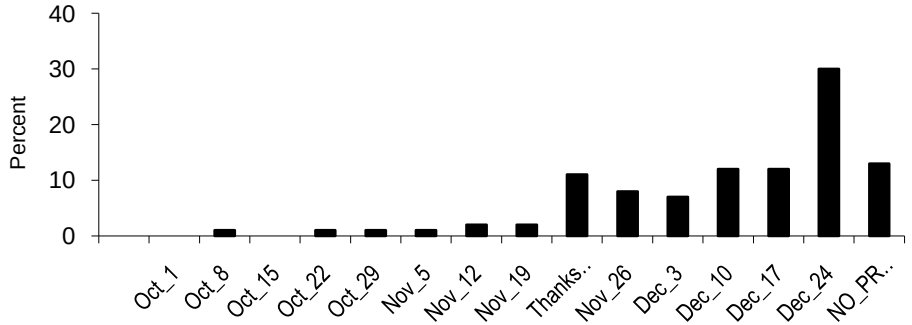
Preferred day for 60-day season to open for those who primarily hunted the Bootheel Region (n=166).



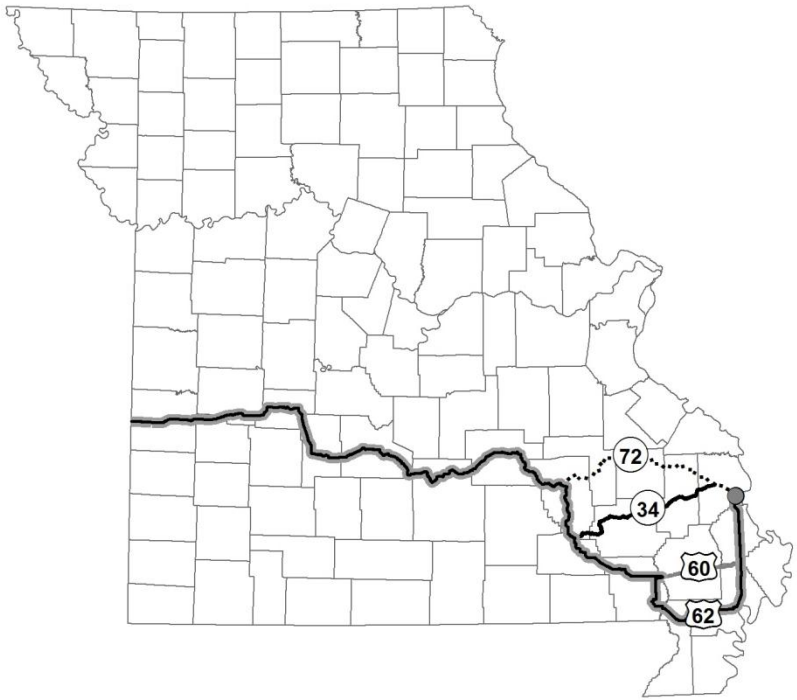
Preferred day for 45-day season to open for those who primarily hunted the Bootheel Region (n=157).



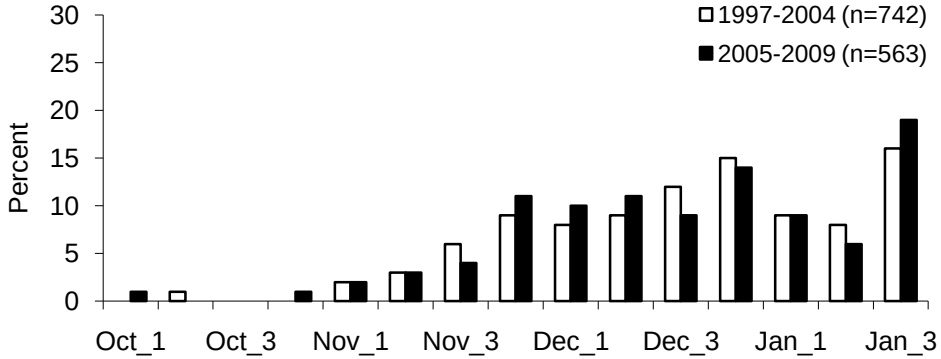
Preferred day for 30-day season to open for those who primarily hunted the Bootheel Region (n=158).



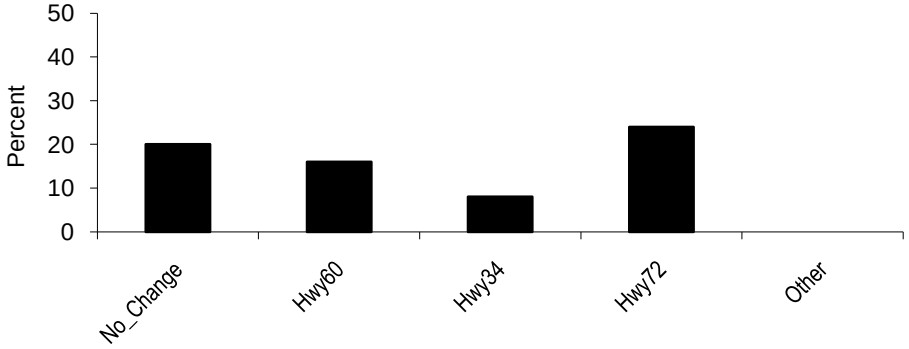
BOOTHEEL: Although season date preferences were later than in most locations, a fairly sizeable proportion of hunters still favor November and December hunting opportunity (64%). A higher proportion of hunters in this region compared to most were dissatisfied with season dates (35%) and, to a lesser extent, zone boundaries (20%). Most hunters (32%) did not have a preference about zone boundary locations, but of those who did, 35% recommended that the boundary be moved to HWY 72 and 29% recommended no change.



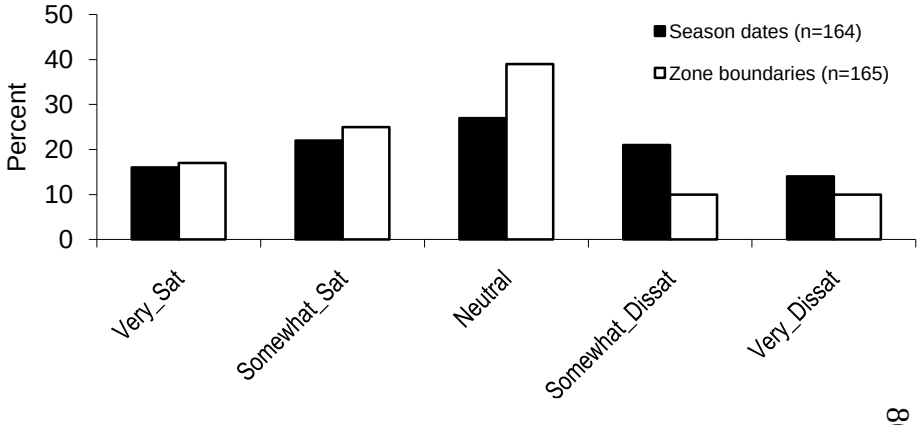
Week most preferred to hunt ducks for hunters who primarily hunted the Bootheel Region: 1997-2004 and 2005-2009.



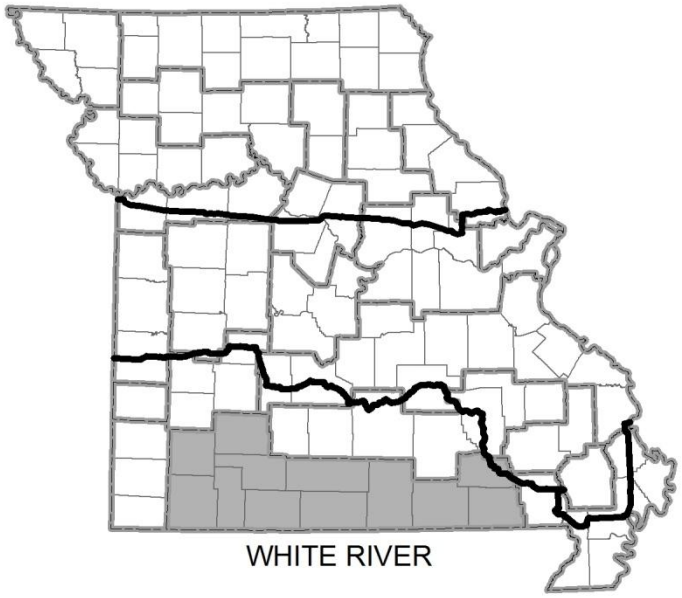
South Zone boundary preferences for eastern Missouri among those who primarily hunted the Bootheel Region (n=185).



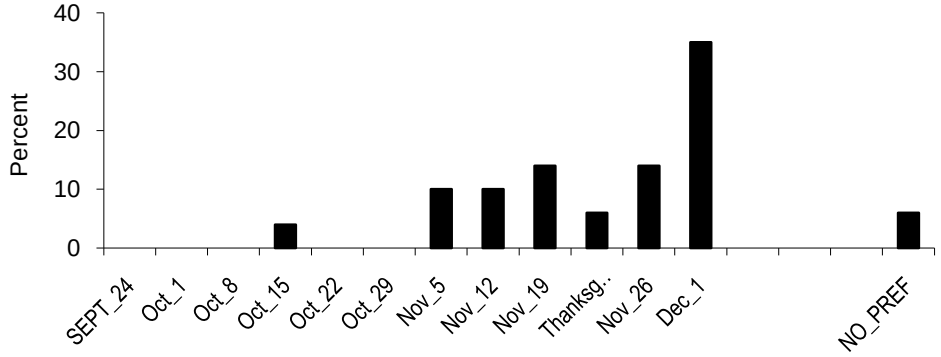
Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Bootheel Region.



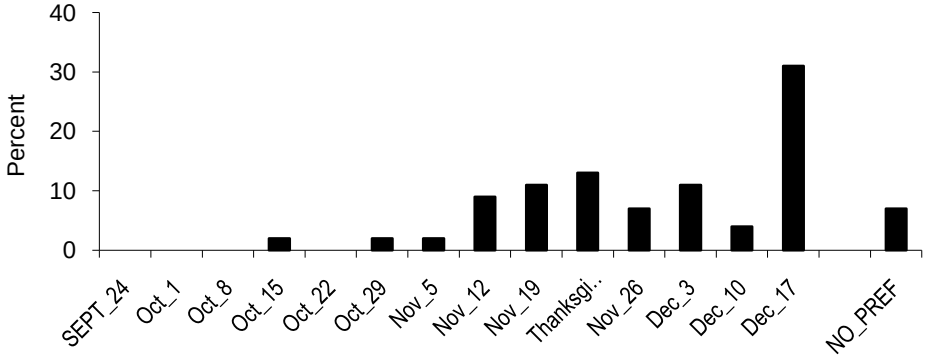
WHITE RIVER LAKES: Large reservoirs in South Missouri provide limited habitat diversity for migrant ducks; however, there once was a tradition of early season diver hunting. Now more hunters target late season mallards. A lack of shallow wetland habitat in South Missouri limits the number of ducks supported throughout the fall and early winter. Similar to the Bootheel, 35% of hunters in this region preferred a 60-day season that is as late as the federal framework will allow, while 58% would preferred an earlier opening date. Only 6% preferred the current South Zone 60-day season opening date of Thanksgiving. In the event of 45- and 30-day seasons, opening the season as late as possible was the most popular choice, but 61% and 59% preferred an earlier choice in the 45- and 30-day seasons, respectively.



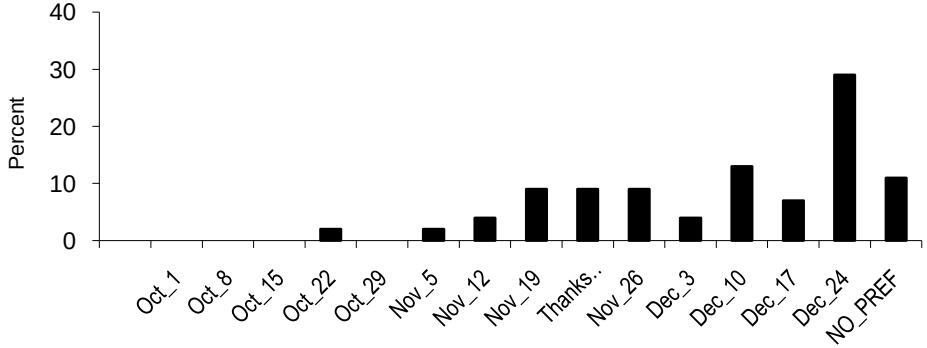
Preferred day for 60-day season to open for those who primarily hunted the White River Region (n=49).



Preferred day for 45-day season to open for those who primarily hunted the White River Region (n=45).

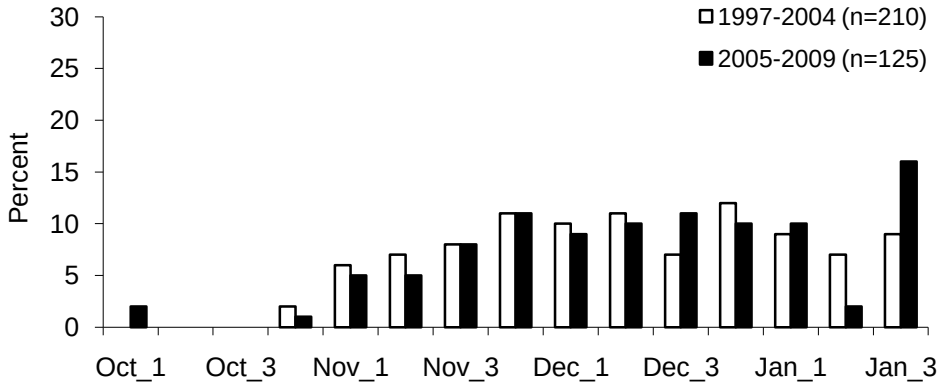


Preferred day for 30-day season to open for those who primarily hunted the White River Region (n=45).

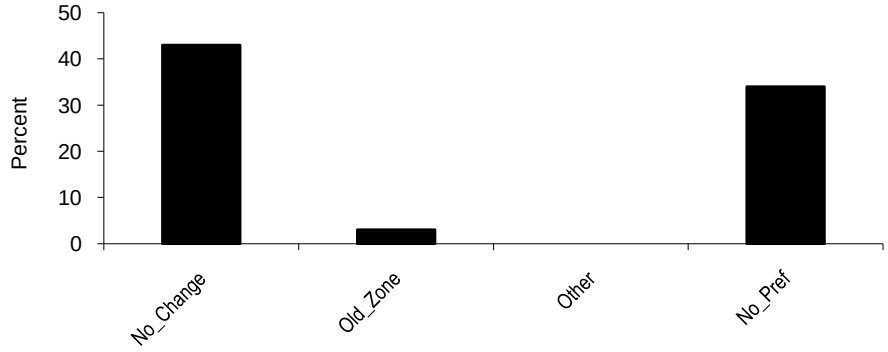


WHITE RIVER: Hunters had diverse opinions about their favored week to hunt. Hunters most frequently indicated their preferred week to hunt was in December (40%), but a nearly equal proportion also preferred November (29%) and January (28%). Twenty-two percent of hunters in this region were dissatisfied with season dates and 12% with zone boundaries.

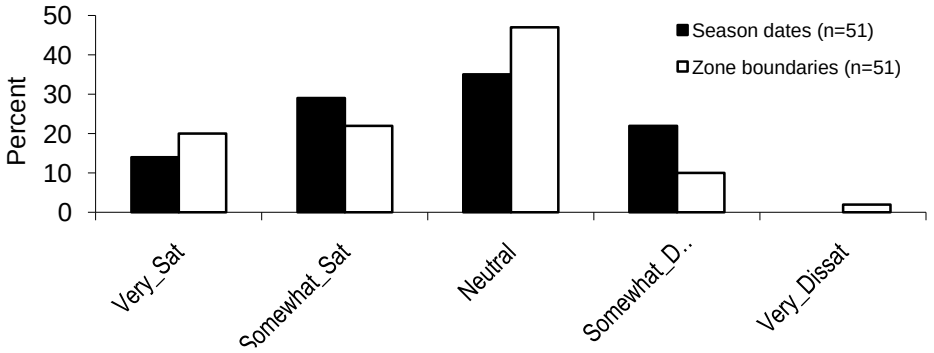
Week most preferred to hunt ducks for hunters who primarily hunted the White River Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for western Missouri among those who primarily hunted the White River Region (n=79).

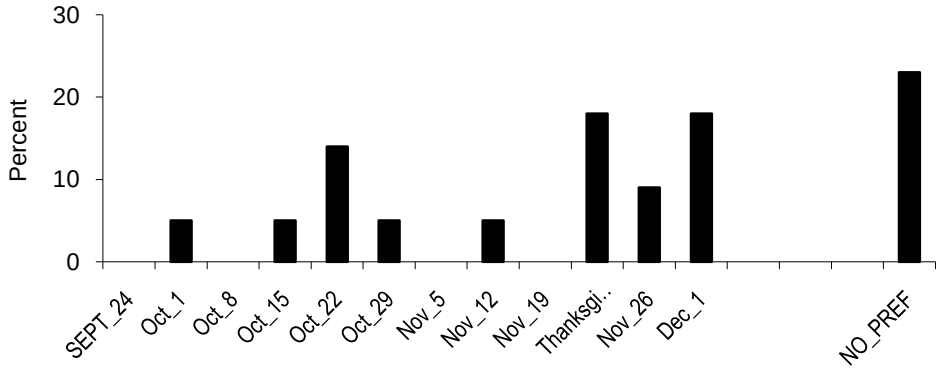


Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the White River Region.

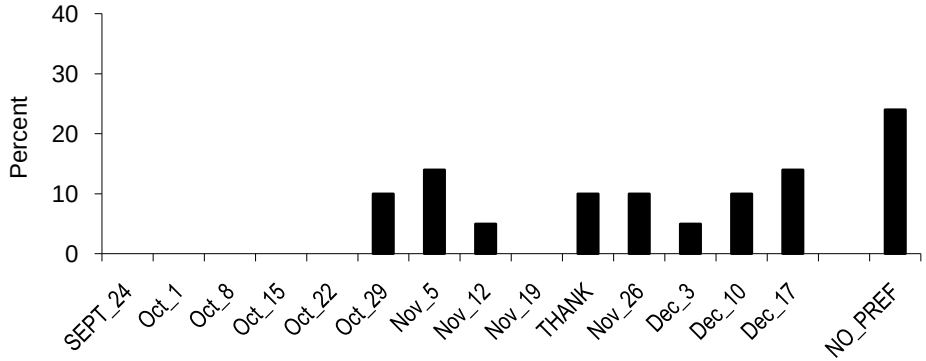


SOUTHWEST: Hunters in this region are faced with limited habitat for duck hunting. Small wetlands and ponds provide some early season opportunity and large irrigation lakes, streams, and surrounding crop fields provide some late season hunting opportunity. Based on a very limited sample size, the diverse preferences for season dates likely reflect the different hunting styles and habitat preferences among hunters. Eighteen percent of respondents indicated they preferred the current South Zone opener on Thanksgiving, 34% indicated they would like an earlier season, and 27% indicated they would prefer a later season. Season date preferences were more variable for a 45-day season. In the event of a 30-day season, hunters were split with 26% wanting as late a season as possible and 16% preferring an earlier season with a November 19 opener.

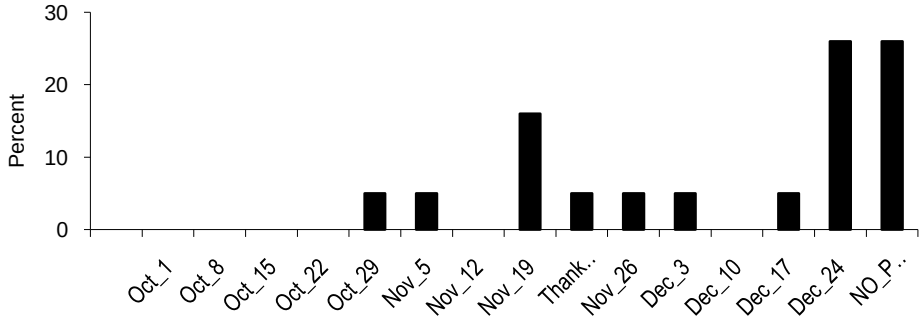
Preferred day for 60-day season to open for those who primarily hunted the Southwest Region (n=22).



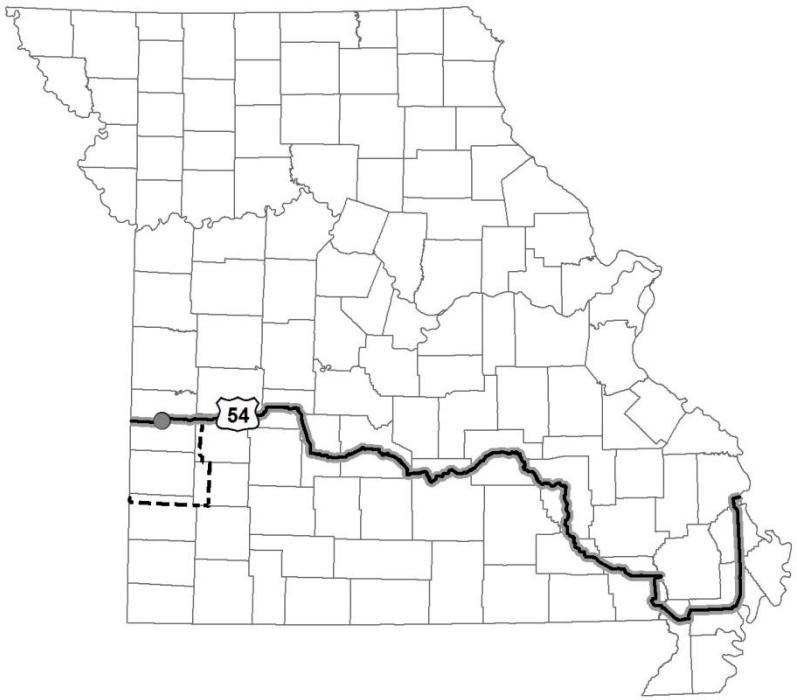
Preferred day for 45-day season to open for those who primarily hunted the Southwest Region (n=21).



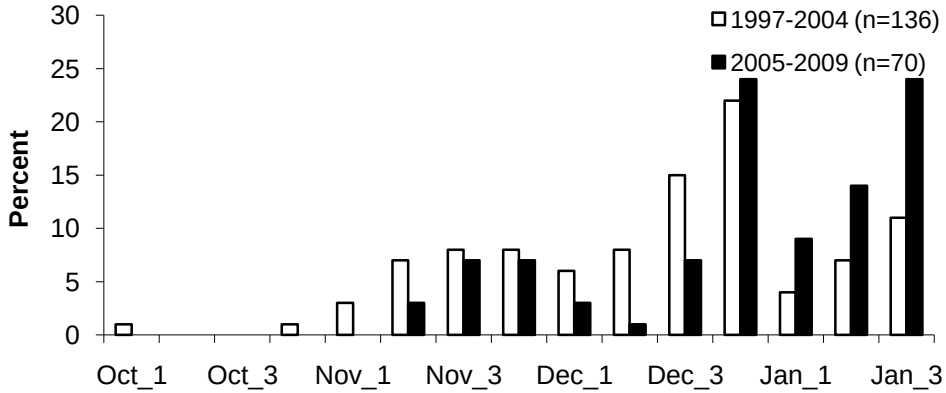
Preferred day for 30-day season to open for those who primarily hunted the Southwest Region (n=19).



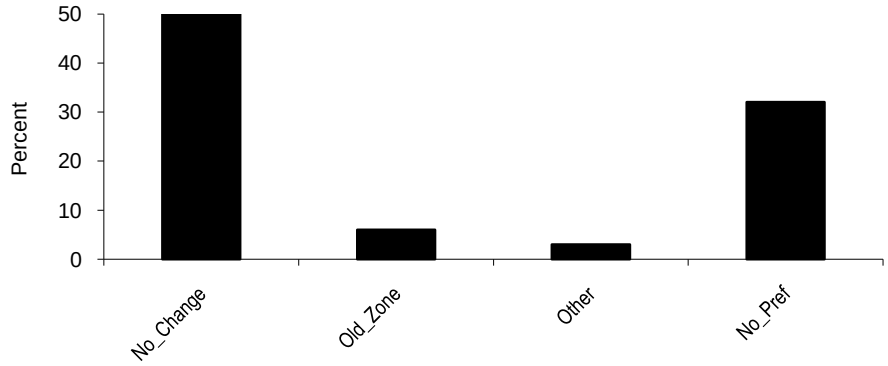
SOUTHWEST: Of all regions in Missouri, the highest proportion of hunters (47%) indicated their preferred week to hunt was in January. Over 60% of respondents in this region preferred that the current zone boundary remain in place the next five years. Only 4% of the respondents were dissatisfied with zone boundaries, but 25% were dissatisfied with season dates.



Week most preferred to hunt ducks for hunters who primarily hunted the Southwest Region: 1997-2004 and 2005-2009.



South Zone boundary preferences for western Missouri among those who primarily hunted the Southwest Region (n=31).



Hunter satisfaction with season dates and zone boundaries by those who primarily hunted the Southwest Region.